

ICE 4000

Hardware and Installation Manual

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The Global Leader in Electronic Transaction Solutions

**WORLDWIDE
PAYMENT SOLUTIONS**

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This document applies to the *Hypercom ICE 4000 terminal*.

FCC PART 15 REQUIREMENTS NOTICE

- This device must not be installed on coin-operated telephone lines or party lines.
- This device (equipment) complies with the requirements in Part 15 of FCC Rules for a Class A computing device. Operation of this device (equipment) is subject to the following two conditions:
 - This device (equipment) may not cause harmful interference, and
 - This device must accept any interference received, including interference that may cause undesired operation.
- If this device (equipment) is used in a residential area, it may cause unacceptable interference to radio and TV reception requiring the operator to take whatever steps necessary to correct the interference.
- Repair work on this device (equipment) must be done by Hypercom Corporation or an authorized repair station.

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio and or television reception, which can be determined by turning the equipment off and on, the user is encouraged to attempt to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an electrical outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio or television technician for assistance

This equipment has been certified to comply within the limits for a Class B computing device, pursuant to FCC Rules. In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cable is likely to result in radio and or television interference. The user is cautioned that changes and modifications made to this equipment without the expressed approval of the manufacturer, could void the user's authority to operate this equipment.

WARNING:

To comply with FCC RF exposure requirements, the CDPD or Mobitex units must be operated with a minimum separation distance of 3 cm (1-1/8 inches) between its antenna and a person's body. The user's hand should not be placed next to the antenna or at locations on the unit where the antenna is connected. A minimum separation distance of 1.5 cm is needed to ensure compliance with FCC RF exposure limits for the hand.

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Introduction

This book, *ICE 4000 Hardware and Installation Manual*, is a comprehensive guide to working with the Hypercom ICE 4000 terminal.

Guide Organization

This book is designed to provide you with information relevant to Hypercom equipment. This book is divided into two chapters:

- Chapter 1 Equipment Information: describes the ICE 4000 terminal in detail
- Chapter 2 Equipment Installation: describes how to install the ICE 4000 terminal

Who Should Use This Guide

This guide is intended for terminal operators, technicians, or those who oversee the installation of POS hardware.

Guide Conventions

This section provides information to help you understand the procedures and concepts presented in this guide. The following special terms and style conventions are used throughout this document:

Component names: Special bold text highlights certain items including the names of window and dialog box components. This text appears in instructions for specific actions such as clicking buttons, typing in text boxes, and selecting from lists. Some examples are:

From the **Main** tab page of the **Group Definition** dialog box, click **List**.

Emphasis: Emphasis is indicated by indented text, as follows:

NOTE: A note contains neutral or positive information supplementing the main text. It is often information that applies only to special cases.

IMPORTANT: Important statements draw attention to information crucial to using the product successfully. Pay special attention to Important statements.

Procedures: Numbered procedures have a special graphic appearing in the margin of the text. The words *Step-by-Step* also appear in bold at the beginning of the procedure.



Step-by-Step

To perform a procedure:

1. Follow the steps outlined in the procedure.
2. Most procedures have at least two steps.
 - a. This is a substep.
 - b. Substeps must be completed in the order given.

Caution and Warning boxes: When you see a Caution or Warning message, read the information promptly and carefully before proceeding. The formats for the boxes follows.

CAUTION

Caution advises that a negative result such as a loss of data may occur.



WARNING

Warnings provide information that is essential to the safety of the user, the equipment, or both. Failure to do as instructed may result in physical damage.



Equipment Information

This chapter provides an overview of the Hypercom ICE 4000 terminal. Included are the features and benefits of the device.

Terminal Information

The Hypercom ICE 4000 terminal is a fully functional terminal that supports draft capture, check verification and guarantee, authorization, debit, and on-screen advertising through Term-Master Suite and ICE-PAC.

When communication with the host is interrupted, the terminals support offline transaction capture. These transactions are then communicated to the host before settlement. At settlement, the terminal totals are matched with host totals. In the rare instance of non-matching totals, automatic batch uploading allows accurate matching of terminal and host transaction details and provides rapid automated arbitration and balancing.

Settlement functions are either password protected for manual activation or are handled automatically at a time pre-set to meet merchant needs.

The ICE 4000 terminal provides application-level statistical and diagnostic information to the host at the end of each settlement period. This information enables the network operator or processor to be actively involved in maintenance and service.

For software maintenance, the Hypercom ICE 4000 terminal uses application downloading from the Hypercom PC-based Term-Master, terminal-to-terminal loading (fast loading), or loading from the processing host.

The Hypercom Term-Master software manages the ICE 4000 terminal. Term-Master is a PC application that can store, retrieve, update, and transmit a custom configuration for any terminal in a customer terminal population. Term-Master also handles terminal software loading using an optional dial-up request and terminal operation statistics.

For initial configuration, you enter terminal-specific information using Term-Master before the terminal goes online for full initialization of operating parameters from the processing host. see figure 1-1 on page 1-2.



Figure 1-1. ICE 4000 terminal

Features

- Integrated thermal printer
- 512K memory, optional 1 MB and 1.5 MB available
- Integrated PIN and signature capture pads
- Dial line operation
- Smart card support
- Multi-host application support
- High-contrast 160 x 160 FSTN display with integrated 12-bit resolution
- Full track 1 & 2 simultaneous card reader
- Multi-tasking operating system
- Electronic receipt capture
- On-screen advertising available

ICE 4000 Hardware Features

The following is a list of the ports and features of the ICE 4000 terminal:

Comm Port

The RS232 comm port allows the ICE 4000 terminal to communicate with external devices such as an ECR (electronic cash register), OCR (optical character reader) wand, and a bar code reader. This port is also used to support an external PIN pad.

Power Port

The power port supports two types of Hypercom power packs: The Linear power pack is used within the United States of America. The Switcher power pack is used internationally.

Contrast Control Dial

Rotating the Contrast Control Dial, located on the left side of the terminal, changes the contrast of the display screen.

Terminal Modem

The optional internal modem, the Hypercom FastPOST™ 9600, is compatible with the Bell 212A modem and the CCITT V.22 interface and provides for Asynchronous or Synchronous operation at 9600 bps. The optional modem is suitable for both dial and leased-line operation.

Terminal Radio

The ICE 4000 supports four radio types: CDPD (cellular digital packet data), Mobitex, GSM, and the 900 MHz.

Terminal Power Adaptors

Hypercom offers two types of terminal power adaptors: The Linear power adaptor is used within the United States of America. The Switcher power adaptor is used internationally.

Transactions and Functions

The ICE 4000 terminal supports the full transaction set required for authorization, draft capture, debit, check verification and guarantee, proprietary cards, and mail and phone orders.

Term-Master supports automated terminal configuration, terminal interrogation, automated program changes, and merchant installation.

Terminal Initialization

Automated Terminal Configuration is downloaded from the host or from the Hypercom Term-Master application. Term-Master terminal profiles are downloaded through terminal initialization to meet the specific requirements of merchant categories such as restaurants for tips, retail, supermarkets, and the hospitality industry.

Terminal Diagnostics

Term-Master supports the reporting of status and statistics such as response time measurements, communication errors, re-dials, card-read errors, and password review.

Application Program Changes

Program changes are automated and downloaded through either a host-resident process or Term-Master.

Features

This section discusses many of the features of the ICE 4000 terminal.

Financial Integrity

The ICE 4000 terminal generates automatic reversals to achieve total financial transaction integrity. These reversals ensure that communications and processing errors do not result in lost transactions, duplicate processing, or the failure of terminals to balance. The ICE 4000 terminals also enable simple terminal balancing and settlement, while eliminating network overloads caused by end-of-day batch transfers.

Fast Response Times

The fast response time of the ICE 4000 terminal is the direct result of the efficient SDLC protocol, which permits pre-dialing and message compression. At a speed of 9600 bps, EFT messages of 150 characters are transmitted in 0.8 seconds, increasing throughput four to ten times over traditional 300 bps Asynchronous terminals.

Reduced Communications Costs

The ICE 4000 terminals reduce transaction costs by taking advantage of recent advances in communications and networking technology. Using an optional modem, the savings are generated through short dial-up online times, local area networking, and concentration using the Hypercom regional Network Access Controllers (NACs), reducing long distance costs and improving network economics. These terminals actively interface through the Hypercom NACs with SNA, X.25, and BISYNC networks already in place.

Networking Efficiency

The ICE 4000 terminals are totally compatible with the Hypercom family of Network Access Controllers (NACs), providing end-to-end network optimization and concentration to keep communication costs low.

Term-Master

The ICE 4000 terminals support parameter and software downloading. Parameter downloading does not affect merchant totals due to the sophisticated architecture of the terminal. Term-Master collects Management Information System (MIS) statistics and can be interrogated online for speedy problem resolution. The PC-based Term-Master package supports software download requests from terminals even when the PC is unattended, ensuring terminal software is automatically kept up to date. The ICE 4000 terminals support on-screen advertising and can print custom receipt headers and footers. Screen images are downloaded through ICE-PAC and Term-Master Suite.

Using an optional modem, a merchant can install the ICE 4000 terminal through the menu-driven procedure that identifies the telephone line profile for tone or pulse, or PABX access code, prompts for the telephone numbers for initialization and network management, and prompts for a unique terminal identification number with optional check digit.



Equipment Installation

This chapter describes how to install the ICE 4000 terminal.

The ICE 4000 underpanel connectors include power, PIN, battery and SAM chip panels, and line ports.



Figure 2-1. ICE 4000 under panel connectors

Turning On the Terminal

The ICE 4000 terminal operates using a +12 Vdc power cable in conjunction with a 110-Volt grounded power receptacle.



Step-by-Step

To turn on the ICE 4000 terminal:

1. Connect the +12 VDC power cable from the AC adaptor to the terminal power socket labeled *PWR*.
2. Plug the adaptor into a 110-Volt grounded power receptacle. Press the power switch. Be sure the connector is firmly seated. When the power is connected successfully, the terminal beeps twice and then performs a self-test and diagnostic routine.



WARNING

Do not use an adaptor, a power extender adaptor, a power extender cable, or an AC outlet that does not have a ground connection.
Do not disassemble the AC adaptor. Only qualified service personnel should service the adaptor. The AC adaptor was designed for indoor use only. Do not expose to rain or snow.
Do not immerse in fluid.
The reliability of electronic equipment is significantly reduced when it is powered from an underground outlet. A low-power AC adaptor connects power to the terminal. Connect only one terminal to the AC adaptor.

NOTE: To fully charge the battery for mobile use, plug in the +12 VDC power cable and turn the terminal on. Leave the terminal powered up for 4 to 6 hours before using.

Installing the ICE 4000 Paper Roll

The ICE 4000 uses a paper roll for receipt printing.



Step-by-Step

To install the ICE 4000 paper roll:

1. Slide the Paper roll lock switch to the right.
1. Open the paper bucket cover and remove the paper roll.
2. Place the paper roll in the bucket so the paper feeds from under the roll, not over the top, and has a straight-line path into the printer paper-feed mechanism.
3. Feed the paper evenly into the paper feed slot at the rear of the ICE 4000 terminal.
4. When the paper appears, close the paper bucket cover. Slide the Paper roll lock switch to the left. The printer is now ready to print receipts.

Accessing the Battery Pack

The ICE 4000 uses a Lithium Ion battery. The ICE 4000 has built-in circuit protection and battery charger. If using the ICE 4000 as a mobile unit, allow the ICE 4000 terminal to be plugged in and powered up for 4 to 6 hours. This allows the battery to fully charged. Use the following procedures to access the battery pack.



Step-by-Step

To access the battery pack on the ICE 4000 terminal:

1. Place your finger in the Battery access panel groove. Press in and lift the panel away from the ICE 4000. See figure 2-1 on page 2-2.
2. Remove the battery pack. When replacing the battery pack, ensure that the battery is placed label-side up, and that the three metal connectors are installed facing down.

Adjusting the Display Contrast

The ICE 4000 uses a contrast control dial to adjust the display. The contrast control dial is located on the side of the ICE 4000 terminal.



Step-by-Step

To adjust the contrast on the ICE 4000 terminal:

1. Place your finger on the Contrast Control dial.

NOTE: See Figure 2-2.

2. Turn the Contrast Control dial clockwise to darken or counter-clockwise to lighten the contrast.

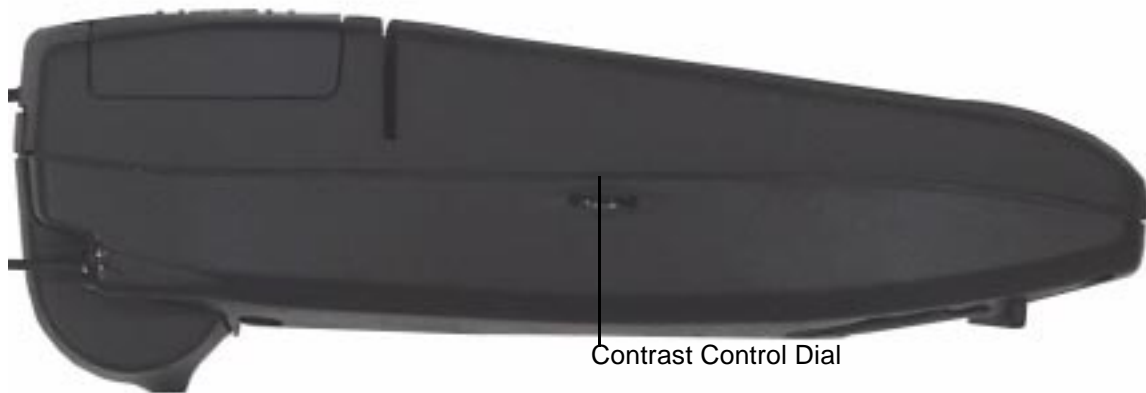


Figure 2-2. ICE 4000 side view

We Welcome Your Comments

Please fax this page with your comments to Hypercom Corporation at 602.504.4990

Document Number: 940265-001

1. In one word, how would you describe this guide? _____

2. How do you use this guide?

- I read it from beginning to end.
- I read only the sections that relate to my immediate needs.
- I read only the sections that relate to my job.

3. When you need to find information in this guide, where is the first place you usually look?

- Table of contents
- Index
- Search through the pages until I find what I am looking for

4. How easily can you find information in this guide?

1 Not easily 2 3 4 5 Very easily

5. How clear is the information in this guide?

1 Not clear 2 3 4 5 Very clear

6. When you try the instructions described in this guide, how easily can you follow them?

1 Not easily 2 3 4 5 Very easily

7. How well did you understand the product before reading this guide?

1 Not well 2 3 4 5 Very well

8. How well did you understand the product after reading this guide?

1 Not well 2 3 4 5 Very well

9. The best aspect of this guide is _____.

10. The least useful aspect of this guide is _____.

Additional comments:



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