iPOS TC

Product Reference Guide

iPOS TC
Product Reference Guide

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symbol®

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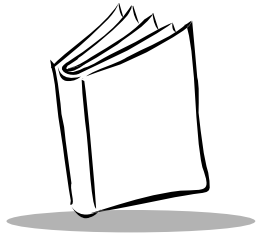

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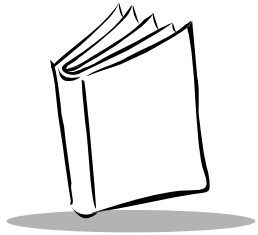

About This Guide

Introduction

The *iPOS TC Product Reference Guide* provides instructions for setting up and configuring the iPOS TC Transaction System.

Chapter Descriptions

- Chapter 1, *Getting Started*, provides an overview of the iPOS TC and its transaction application.
- Chapter 2, *Setting Up the iPOS TC System*, describes how to connect the terminal to a host, connect peripherals, install the screen guard, and mount the terminal.
- Chapter 3, *Configuring the iPOS TC*, provides information on configuring the iPOS TC for customer interaction.
- Appendix A, *Technical Specifications*, provides specification information for the terminal.

Notational Conventions

The following conventions are used in this document:

- *Italics* are used to highlight specific items in the general text, and to identify chapters and sections in this and related documents. It also identifies names of screens, menus, menu items, and fields within screens.
- `Courier text` identifies buttons to be tapped or clicked on screens.
- Bullets (•) indicate:
  - action items
  - lists of alternatives
  - lists of required steps that are not necessarily sequential
- Sequential lists (e.g., those that describe step-by-step procedures) appear as numbered lists.

Service Information

If you have a problem with your equipment, contact the Symbol Support Center. If your problem cannot be resolved over the phone, you may need to return your equipment for servicing. If that is necessary, you will be given special directions.

Note: *Symbol Technologies is not responsible for any damages incurred during shipment if the approved shipping container is not used. Shipping the units improperly can possibly void the warranty.*

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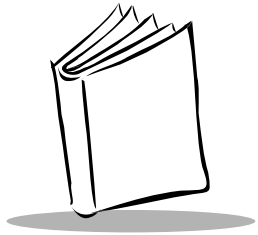


Chapter 1
Getting Started

Introduction

The multifunctional iPOS TC interactive payment terminal enables electronic transaction payments and interoperates with HTML-based applications at point-of-sale. The iPOS TC features:

- 206 MHz Intel StrongARM® processor
- Pressure sensitive touchpad
- Color 1/4 VGA LCD
- GIF and Java applet animation support that enables display of advertisements and promotions
- Dual channel connectivity features legacy data ports (RS-232, RS-485, and USB), PCMCIA Type II slot, and onboard Ethernet
- 3-Track Magnetic Stripe Reader (MSR) for credit and debit card reading
- posPortal transaction application which enables Web-based transactions, allowing customers to select payment method, view itemized purchases, and participate in surveys
- iPOS TC Software Suite for Windows and IBM-based host environments. Based on OPOS or JPOS industry standards, the Software Suite allows developers to use C/C++, Java, or VB to integrate the iPOS TC into the store payment system.

Parts of the iPOS TC

The following illustration indicates the parts of the iPOS TC.

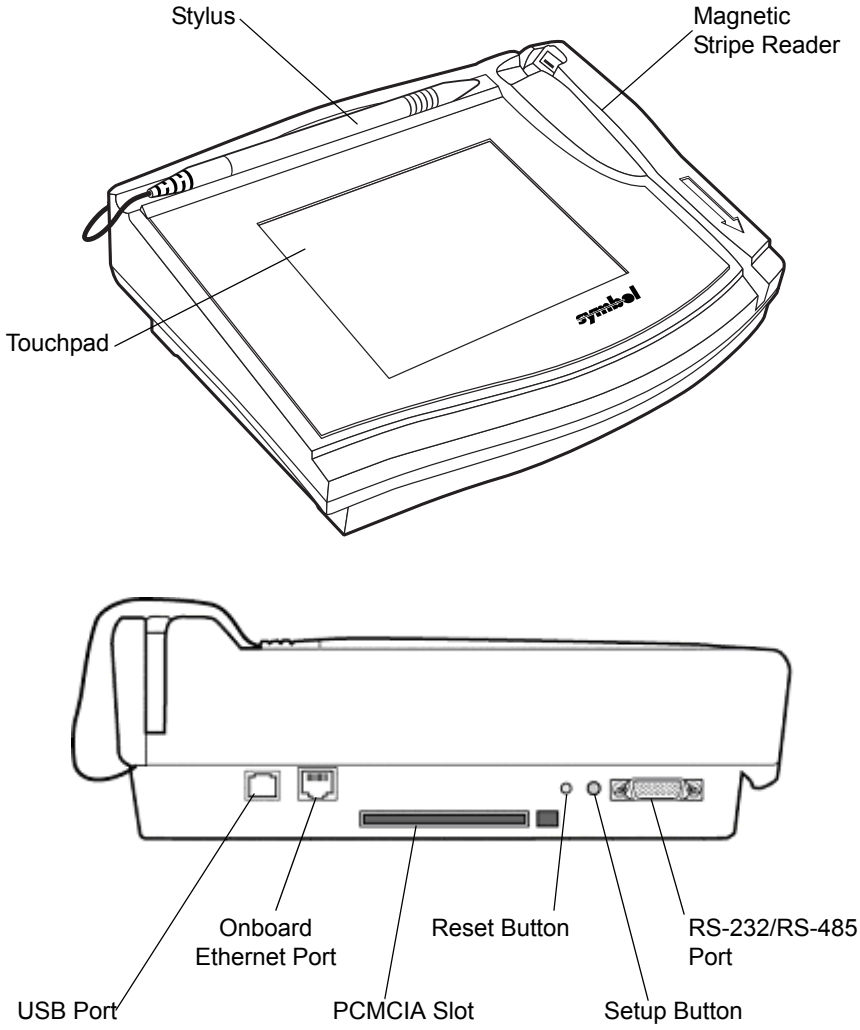


Figure 1-1. Parts of the iPOS TC

System Interface

POS Host Interface

The iPOS TC supports standard RS-232/RS-485 or Universal Serial Bus (USB) interfaces to a POS host device, allowing the terminal to collect line-item purchase and account information, personal identification numbers (PINs), credit and debit authorization, and signatures.

LAN Interface

The iPOS TC contains a PCMCIA Type II slot for PCMCIA cards, supporting LAN, WLAN, and memory functions. Its on-board Ethernet port supports high-speed 10base-T Ethernet connection to a LAN network via a standard Ethernet cable.

The iPOS TC supports PCMCIA ATA flash cards and the Aironet Cisco 350 Series wireless LAN cards. The device does not support hot plug/unplug.

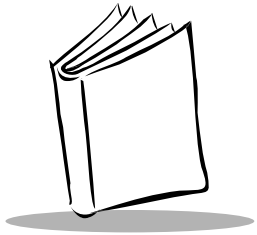
Install the PCMCIA and wireless cards with the product label side facing the bottom of the iPOS TC device.

Dual Channel

The iPOS TC also supports Dual Channel capability using an Ethernet or PCMCIA connection and an RS-232/RS-485 or USB connection to connect to a server and the POS host device simultaneously.

posPortal Transaction Application

The posPortal transaction application allows the iPOS TC to connect to ASP services, enabling Web-based transactions which take advantage of the distribution and customer profiling capabilities of the Internet. posPortal is a Java application which resides and executes on the iPOS TC, and allows customers to select a preferred payment method, view line item detail, participate in surveys, and view targeted color ads. posPortal provides ready-to-integrate templates and offers simple migration to a paperless, electronically secure POS environment. See the *posPortal Online Reference System* available at http://devzone.symbol.com/ for more information.



Chapter 2
Setting Up the iPOS TC System

Introduction

This chapter provides information on installing the iPOS TC, including:

- connecting to a POS host device
- installing peripherals
- installing and replacing the screen guard
- mounting the terminal on a counter or tabletop.

Installing the iPOS TC System

The following items are required to install the iPOS TC system, and are provided with the terminal:

Table 2-1. Connection Items

Connection	Cables/Parts Required
LAN	
On-board Ethernet	Ethernet cable
PCMCIA	PCMCIA card Ethernet cable HDB15/power jack cable (if single channel connection or USB dual channel) AC power adapter
Host	
Host via RS-232	HDB15/DB9 serial cable AC power adapter
Host via RS-485	HDB15/SDL serial cable
Host via USB	USB/USB cable HDB15/power jack cable AC power adapter

RS-232 Installation

To install the iPOS TC in an RS-232 configuration:

1. Shut off power on the POS host device.
2. Plug the serial cable's 15-pin connector (HDB15) into the serial port on the back of the iPOS TC.
3. Plug the serial cable's 9-pin connector (DB9) into a serial port (typically COM1) on the POS host device.
4. Insert the male connector on the AC power adapter cable into the port on the back of the serial cable's 9-pin connector (DB9).
5. Connect the end of the AC adapter to a standard 120V, 60 Hz AC power outlet.
6. Power on the POS host device. The iPOS TC autoconfigures to RS-232.

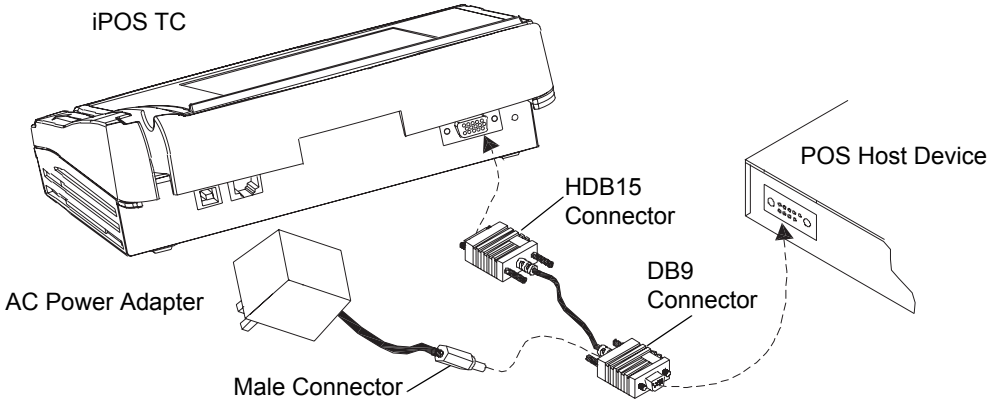


Figure 2-1. RS-232 Configuration

RS-485 Installation

To install the iPOS TC in an RS-485 configuration:

1. Shut off power on the POS host device.
2. Plug the serial cable's 15-pin connector (HDB15) into the serial port on the back of the iPOS TC.
3. Plug the SDL connector into one of the following ports on the POS host device: 4B, 9A, 9B, or 9E.
4. Turn on the POS host device. The iPOS TC autoconfigures to RS-485.

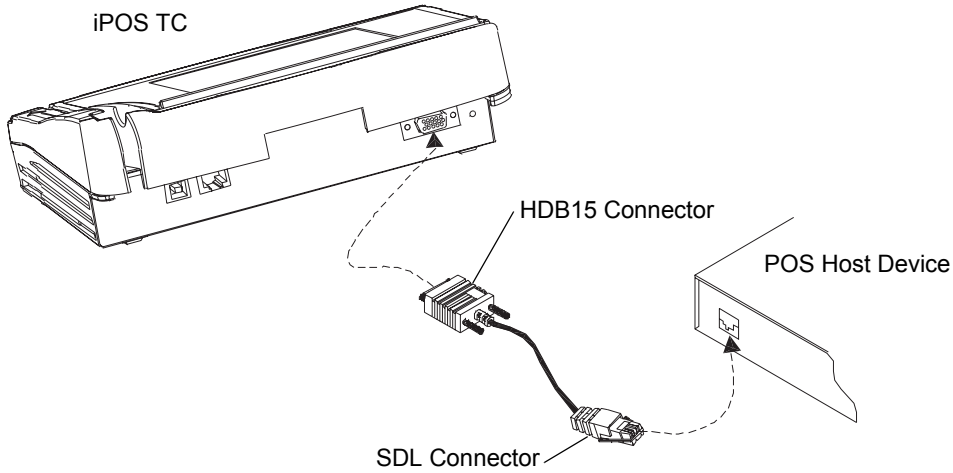


Figure 2-2. RS-485 Configuration

USB Installation

The iPOS TC connects to a USB-enabled PC or POS host device, and behaves as a USB peripheral device. To install the iPOS TC in a USB configuration:

1. Shut off power on the POS host device.
2. Insert one end of the USB cable into the USB port on the back of the iPOS TC.
3. Insert the other end of the USB cable into the USB port on the POS host device.
4. Plug the power jack cable's 15-pin connector (HDB15) into the serial port on the back of the iPOS TC.
5. Connect the other end of the power jack cable to the male connector on the AC power adapter.
6. Connect the end of the AC adapter to a standard 120V, 60 Hz AC power outlet.
7. Turn on the POS host device.

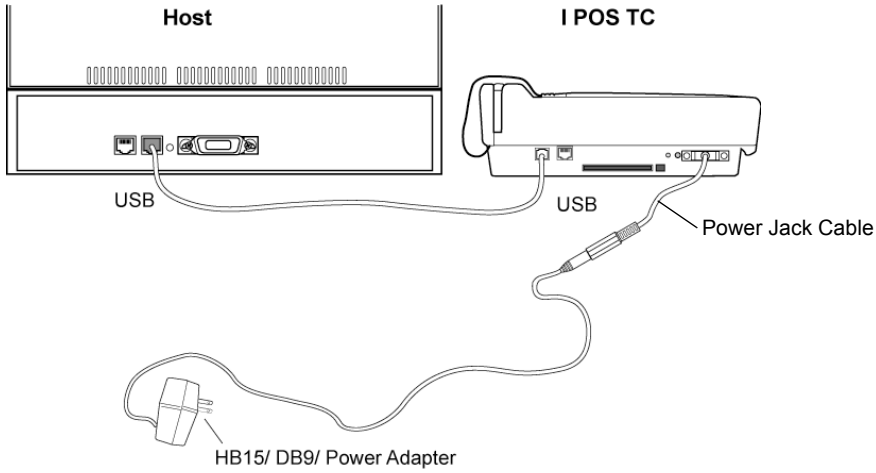


Figure 2-3. USB Configuration

Connecting Peripherals

To connect a peripheral device to the iPOS TC, use an RS-232 or RS-485 auxiliary Y-cable that splits at the HDB15 connector:

1. Plug the cable's 15-pin connector (HDB15) into the serial port on the back of the iPOS TC.
2. Plug one end of the Y-cable into a serial port (typically COM1) on the POS host device.
3. Connect the other end of the Y-cable to the peripheral device. The peripheral requires its own power supply.

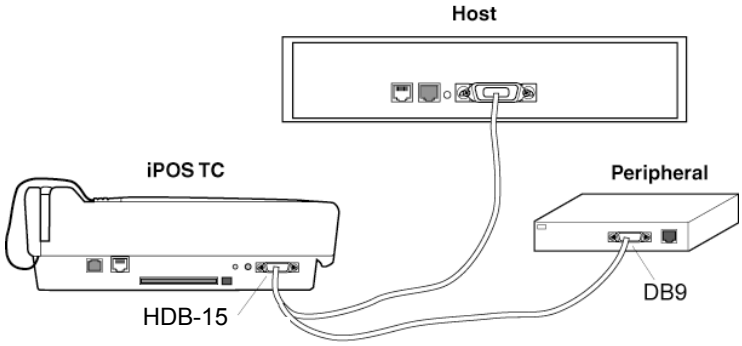


Figure 2-4. Auxiliary Cable Peripheral Connection

Installing the Screen Guard

The screen guard protects the iPOS TC's screen from typical wear such as scratches and spills. Replace the screen guard when excessive scratches are visible or if a liquid is spilled on the screen. This maintenance extends the operation of the iPOS TC.

To install the screen guard onto the iPOS TC:

1. Disconnect power from the iPOS TC.
2. Clean the surface of the terminal and touchscreen using a cloth dampened with non-abrasive glass cleaner. **Do not spray liquid directly onto the terminal**. Wait until the terminal and glass are completely dry.
3. On the back of the screen guard, remove the paper adhesive guard.

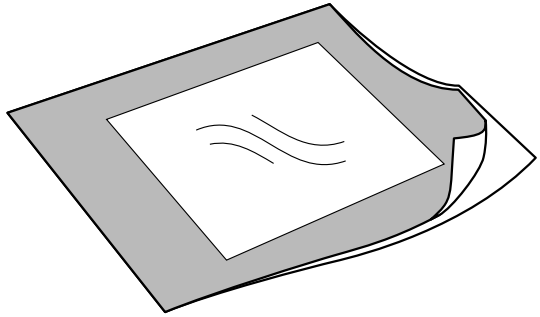


Figure 2-5. Removing Adhesive Guard

4. Place the adhesive side down onto the graphical screen overlay, carefully aligning the edges. Apply gentle pressure to the screen guard to ensure proper adhesion. The screen guard can be removed and repositioned in case of misalignment.

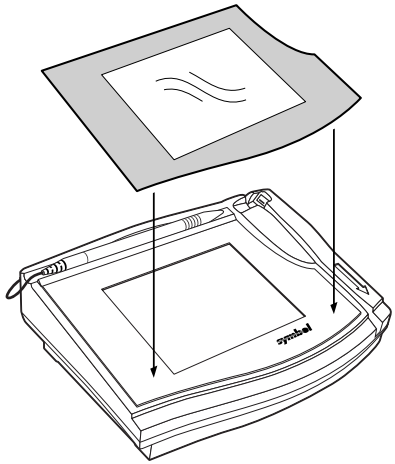


Figure 2-6. Placing Screen Guard on Terminal

Replacing the Screen Guard

To replace the screen guard, carefully remove the worn guard from the terminal by peeling from the upper-left corner of the guard. **Do not remove the graphical screen overlay underneath the guard**.

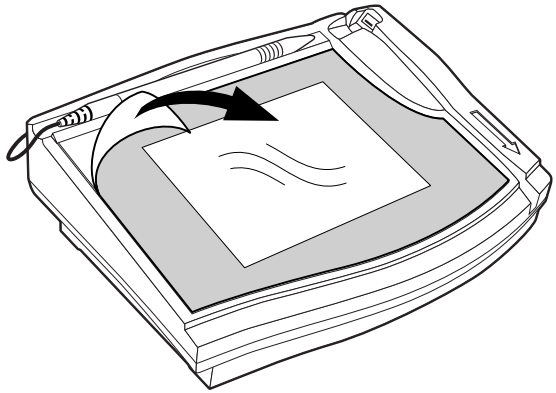


Figure 2-7. Removing Screen Guard

Follow the procedure in *Installing the Screen Guard* to install the new screen guard.

Mounting the iPOS TC

The iPOS TC can be mounted on a counter or tabletop using the following items:

- mounting plate
- 3 bolts or posts
- 3 nuts
- 3 washers.

To secure the iPOS TC to a tabletop:

1. Attach the mounting plate to the table surface using the 3 bolts, nuts, and washers. Leave approximately ¼ to ½ inch between the washer and the bolt head.
2. Position the holes on the bottom of the iPOS TC over the bolt heads and slide to secure.

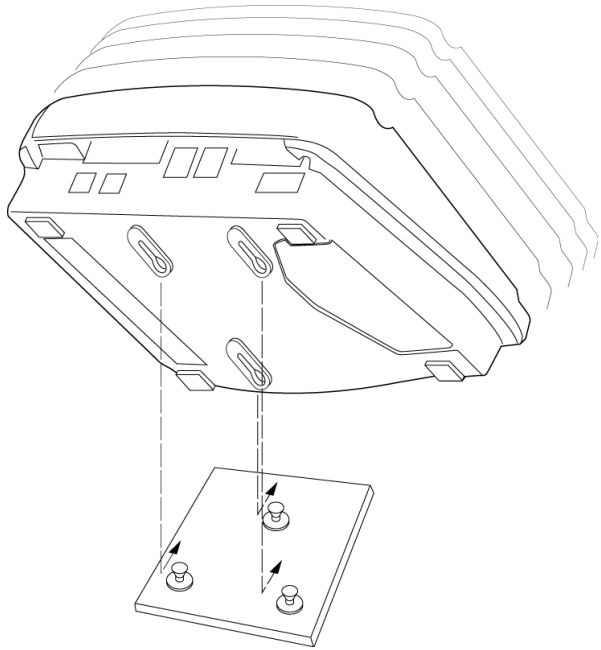


Figure 2-8. Mounting the iPOS TC

Chapter 3
Configuring the iPOS TC

The iPOS TC uses a setup program to configure hardware settings such as calibration and screen contrast, and to test device functions such as the card reader and signature pad.

Using the Setup Program

To access the iPOS TC setup program:

1. Supply power to the iPOS TC.
2. When the message *Press SETUP button to run Setup* displays, press the Setup button on the rear panel of the iPOS TC with the stylus.

   The *Calibration* screen appears.

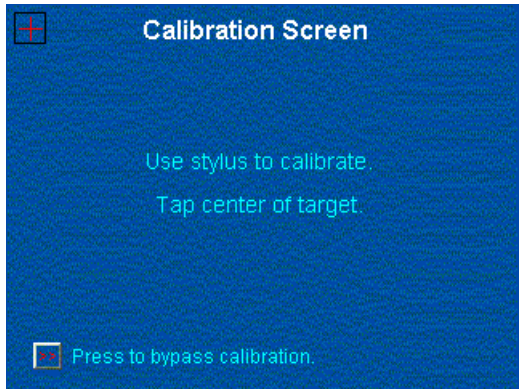


Figure 3-1. Calibration Screen

3. Using the stylus, tap the cross hairs on the calibration screen as instructed, or tap `Press to bypass calibration` to skip calibration and use the current calibration settings.

   The *Password* screen appears.

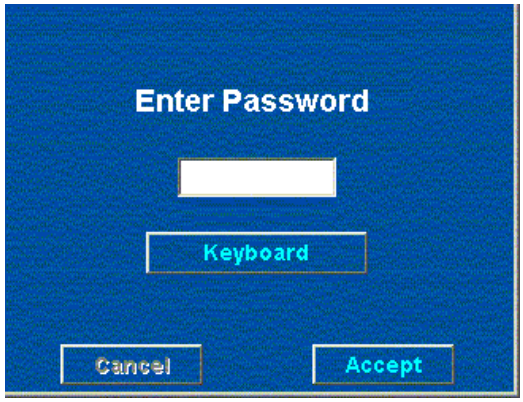


Figure 3-2. Password Screen

4. A password is required to access the Setup menu. Tap `Keyboard` to open the virtual keyboard, then enter the default password (*password*) by tapping the appropriate keys.

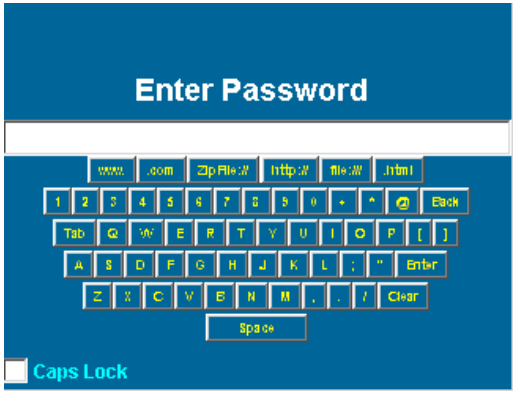


Figure 3-3. Virtual Keyboard

5. Tap `Enter`. The *Password* screen reappears.

6. Tap `Accept`. The Setup screen appears.

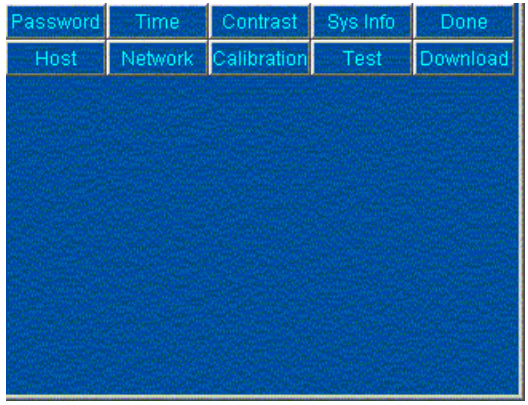


Figure 3-4. Setup Screen

Changing iPOS TC Settings

The Setup screen offers the following options used to customize settings on the iPOS TC:

- Password - sets a new password for accessing setup mode
- Time - sets a new system time
- Contrast - changes screen contrast
- Sys Info - displays software version information
- Host - displays host settings
- Network - sets IP configuration information
- Calibration - calibrates the iPOS TC screen
- Test - tests the signature pad, Magnetic Stripe Reader (MSR), Smart Card, and encryption
- Download - reboots the iPOS TC in download mode and enables security key download
- Done - exits Setup mode.

Creating a New Password

The iPOS TC is shipped with a default password used to access setup mode. Set a new password to prevent unauthorized persons from changing the setup parameters. This password is required to make future changes to the setup.

To set a new password:

1. Tap `Passwd` on the Setup screen.

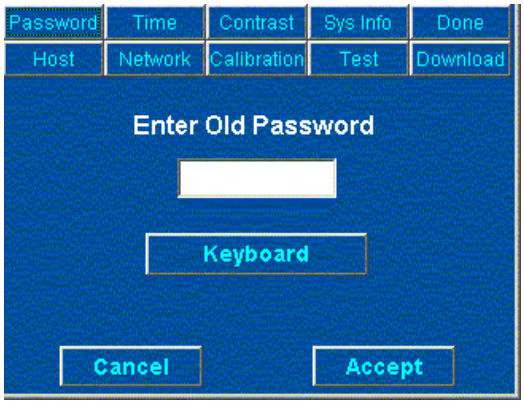


Figure 3-5. Enter Old Password Screen

2. Tap `Keyboard` on the *Enter Old Password* screen to open the virtual keyboard.
3. Enter the current password (**password** if setting a new password for the first time).
4. Tap `Enter` to return to the *Enter Old Password* screen.
5. Tap `Accept`. The *Enter New Password* screen appears.
6. Tap `Keyboard` and enter the new password by tapping the appropriate keys.
7. Tap `Enter`, then tap `Accept`.
8. To confirm the new password, tap `Keyboard` and enter the new password again.
9. Tap `Enter`, then tap `Accept`. The Password screen disappears.

Setting Date and Time

To set the date and time on the iPOS TC:

1. Tap `Time` at the top of the Setup screen. The *Date and Time* screen appears.

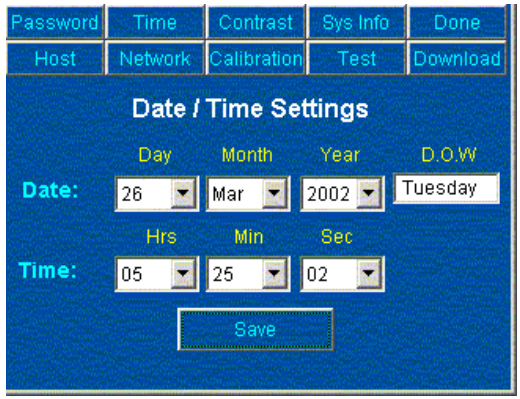


Figure 3-6. Date and Time Screen

2. Use the drop-down menus to change the date and time settings. The day of the week (D.O.W.) changes to reflect the new settings.
3. Tap `Save` to submit the new settings.

Adjusting Contrast

To increase or decrease screen contrast:

1. Tap `Contrast` at the top of the Setup screen. The *Change Contrast* screen appears.

Figure 3-7. Change Contrast Screen

2. Tap the left arrow button to decrease contrast, or the right arrow button to increase contrast. Contrast values range from 0 to 64.
3. Tap `Save`.

Viewing System Information

Tap `Version` at the top of the Setup screen to view iPOS TC system information.

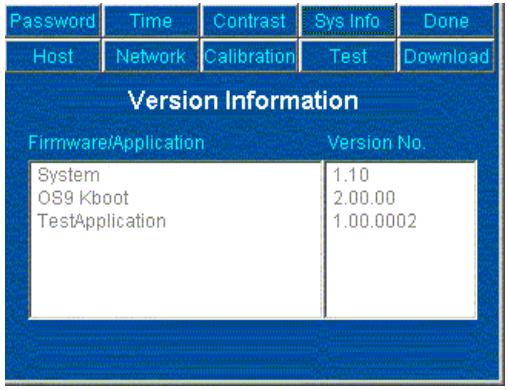


Figure 3-8. Version Information Screen

Changing Host Settings

Tap `Host` at the top of the Setup screen to change host settings.

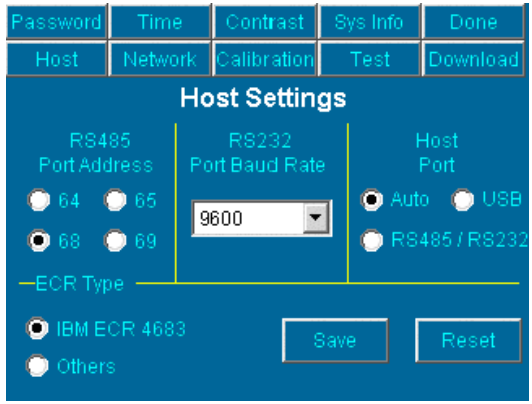


Figure 3-9. Host Settings Screen

Use the buttons and drop-down menu to change the following host information:

- RS-485 post address (default 65)
- Baud rate (default 9600)
- Host port selection (default Auto)
- ECR type (default Others)

Tap `Save` to save the new settings, or `Reset` to return to the default settings.

Changing IP Configuration Settings

Tap `Network` at the top of the Setup screen to change IP configuration settings.

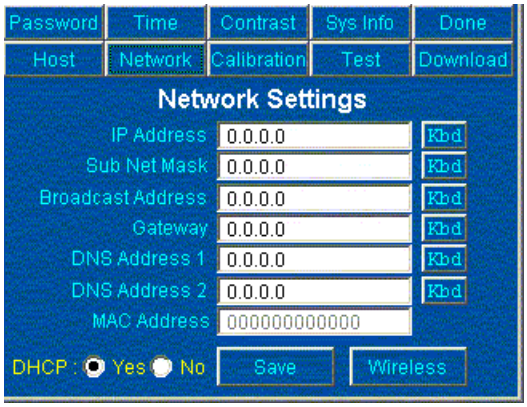


Figure 3-10. Network Settings Screen

1. To change the information displayed in a text field, tap `Kbd` to the right of the field to open the virtual keyboard and enter the new value.
2. Tap the `Yes` or `No` button to select or de-select DHCP, according to system requirements.
3. Tap `Save` to submit the new values, or `Default` to return to the default values.

Calibrating the iPOS TC

To re-calibrate the terminal, tap `Calib.` at the top of the Setup screen.

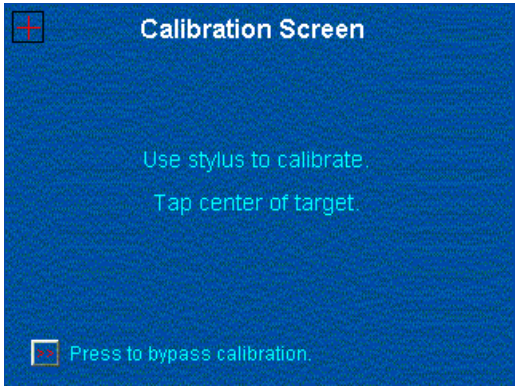


Figure 3-11. Calibration Screen

Using the stylus, tap the cross hairs on the calibration screen as instructed, or tap `Press to bypass calibration` to skip calibration and use the current calibration settings. The Setup screen reappears.

Setting Default Calibration Settings

If tapping the target is ineffective due to incorrect calibration settings, press the Reset button on back of the iPOS TC to restart using the default calibration settings.

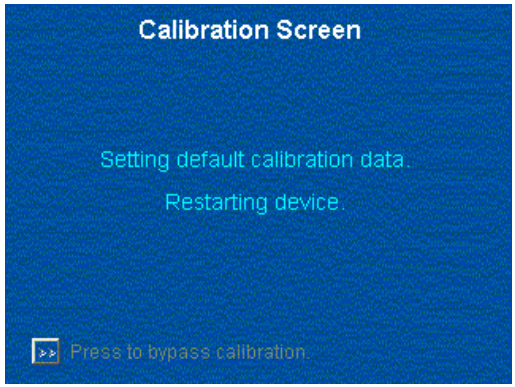


Figure 3-12. Setting Default Calibration Screen

Testing Device Functionality

Tap `Test` at the top of the Setup screen to test device functions.

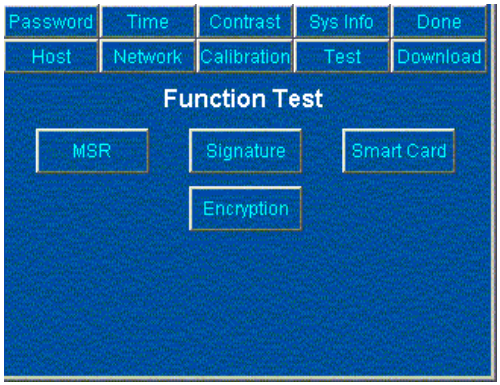


Figure 3-13. Function Test Screen

Tap the buttons on this screen to test the functionality of the MSR, signature pad, Smart Card reader, or the Security Module.

Testing the Magnetic Stripe Reader (MSR)

Tap `MSR` on the *Function Test* screen to test the functionality of the MSR.

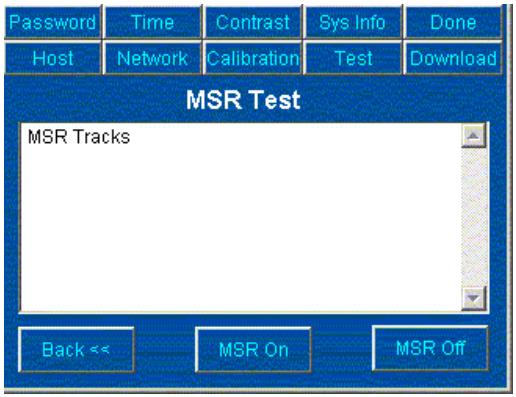


Figure 3-14. MSR Screen

Tap the `MSR On` button to turn on the MSR reader, and swipe a card through the MSR. Track data displays.

Tap `MSR Off` to turn off the reader. Tap `Back` to return to the *Function Test* screen.

Testing the Signature Pad

Tap `Signature` on the *Function Test* screen to test the functionality of the signature pad.

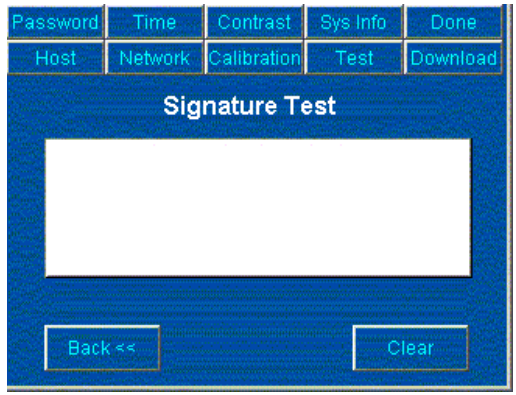


Figure 3-15. Signature Screen

Write on the screen using the stylus. Tap `Clear` to clear the writing from the screen.

Testing the Smart Card Reader

Tap `Smart Card` on the *Function Test* screen to test the functionality of the Smart Card reader.

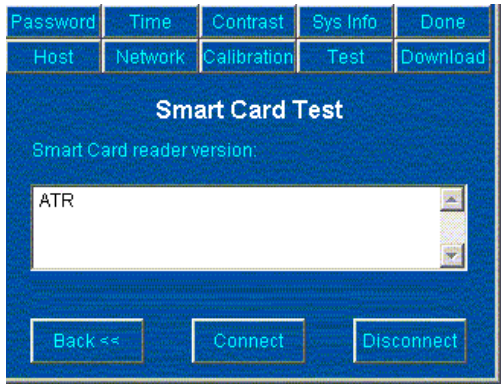


Figure 3-16. Smart Card Test Screen

1. Tap `Connect`. If the Smart Card reader is properly connected, the reader's firmware version appears with screen messages:

Insert a Smart Card into reader for ATR

Smart Card Reader Connected

If the Smart Card reader is not properly connected, the following error message appears:

Error: Smart Card Connect Error

2. Insert the Smart Card. The ATR appears.
3. Tap `Disconnect` to disconnect from the reader.

Testing Encryption

Tap `Encryption` on the *Function Test* screen to test the DUKPT or Master Session encryption methods.

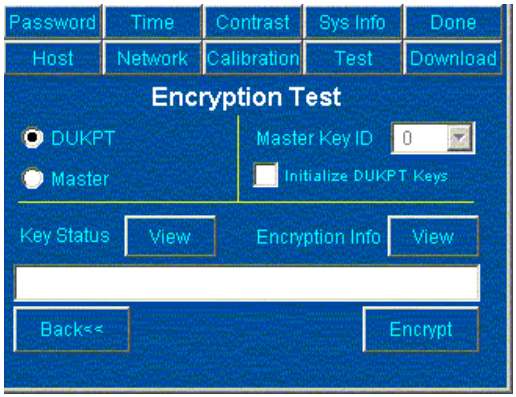


Figure 3-17. Encryption Test Screen

The following options are available on the *Encryption Test* Screen:

- Select the `DUKPT` button to enable the DUKPT encryption method. Then check `Initialize DUKPT Keys` to initialize the DUKPT key and the security key when encryption is performed.
- Select the `Master` button to enable the Master Session encryption method. Then select the Master Key ID from the drop-down menu.
- Tap `View` next to *Key Status* to check the status of the security keys. The *Encryption Key Status* screen shows the status of the security keys used for both

DUKPT and Master Session encryption methods (see *Encryption Key Status Screen*).

- Tap `View` next to *Encryption Info* to review encryption information (see *Viewing Encryption Data* on page 3-14).
- Tap the `Encrypt` button to encrypt the data entered. The resulting PIN block appears in the text box on the screen. If the encryption fails an error message appears at the bottom-left corner of the screen.
- Tap `Back` to return to the main *Test* screen.

Encryption Key Status Screen

Figure 3-18. Encryption Key Status Screen

On the *Encryption Key Status* screen, tap the `Show Status` button to view the status of the DUKPT key, the security key and 10 master keys. The message:

Wait checking status….

appears on the screen, followed by one of the following messages:

<Key Name> Found [or]

<Key Name> NOT Found

When the program completes checking key status, the following message appears at the end of the text area:

End of key Status

Press the `Back` button to return to the *Encryption Test* screen.

Viewing Encryption Data

On the *Encryption Test* screen, tap the `View` button next to *Encryption Info* to view encryption information.

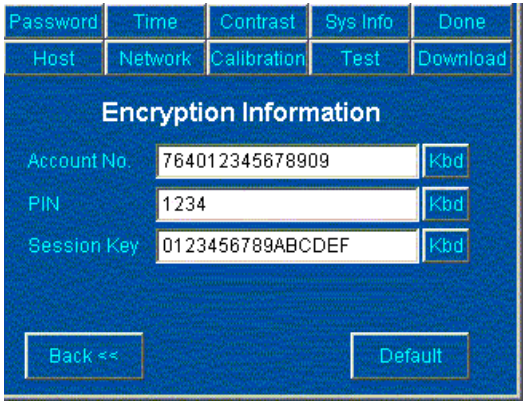


Figure 3-19. Encryption Information Screen

To enter the account number, PIN, and Session Key, tap the `Kbd` buttons next to the respective fields. Enter the new encryption information on the soft keypad.

Tap `Default` to load the default encryption data:

- Account No.: 764012345678909
- PIN: 1234
- Session Key: 0123456789ABCDEF

Press `Back` to return to the *Encryption Test* screen.

Downloading Files to the iPOS TC

Tap `Download` at the top of the Setup screen to download Installation File Blocks (IFB) files or security keys.

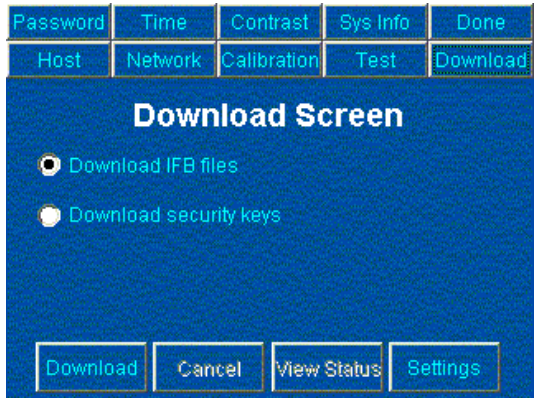


Figure 3-20. Download Screen

Select an option from the *Download* screen:

- Select *Download IFB files* and tap `Download` to restart the iPOS TC in download mode. The screen displays the message *Downloading from Host*. IFB files must be downloaded from a download manager program (e.g., the iPOS TC IFB Installer; see *Using the TC IFB Installer* on page 3-16). The terminal reboots when the download is complete.
- Select *Download security keys* and tap `Download` to download security keys from a host application. The screen displays the message *Downloading security keys*. When a key is downloaded, one of the following message displays:
  - *DUKPT Key loaded* (if DUKPT was downloaded)
  - *Master session key loaded* (if master key was downloaded).

Note: *Setup mode allows downloading security keys to the iPOS TC using an external key-loading program. Download mode only allows downloading IFB files, not security keys.*

Reloading Applications

If an application upgrade is available, use the TC IFB Installer, available from Symbol's Software Developer Zone at http://devzone.symbol.com/, to install Installation File Blocks onto the iPOS TC in order to upgrade or load new applications, configuration files, or images.

Using the TC IFB Installer

The TC IFB Installer application installs an IFB file stored on a host computer or on a PCMCIA card placed in the iPOS TC's PCMCIA card slot.

1. Download the TC IFB Installer application from Symbol's Software Developer Zone at http://devzone.symbol.com/ to the host computer.
2. Open the TC IFB Installer application on the host computer.
3. If installing the IFB from the host computer, locate the IFB file's directory folder using the explorer window on the bottom-left corner of the TC IFB Installer. The bottom-right corner displays all files stored in the selected directory folder. Make sure the `Install from PCMCIA` check box is not checked, then double-click the IFB file to install onto the iPOS TC.

   If installing the IFB from a file on a PCMCIA card, select the `Install from PCMCIA` check box, then enter name of the file in the *File Name* field.
4. Specify the COM port the iPOS TC is connected to in the *Com Port* field. To update the window's file and directory listings, select the `Refresh` button.
5. Click `Install`. If the IFB is installing from a PCMCIA card, enter up to 2 keys. Enter only the amount of keys required by the IFB.

   If the IFB is installing from the host computer, enter the amount of keys the IFB requires. If none are required, there is no prompt to enter keys. Enter the keys exactly as specified by the creator of the IFB; keys are not case-sensitive.
6. The *TC IFB Installer - Installing…* screen appears. This screen displays the following messages in order:
   - *Loading Installation File Block...OK*
   - *Opening COM port 1...OK*
   - *Waiting for Download Message from iPOS TC...*

   The TC IFB Installer waits for a message from the iPOS TC indicating it is ready to download and install the IFB.

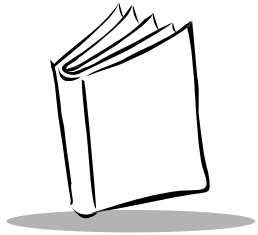
7. Set the iPOS TC to download mode (see *Downloading Files to the iPOS TC* on page 3-15). The iPOS TC sends the download message to the TC IFB Installer. This can take a few minutes. When the TC IFB Installer receives the message, it downloads the IFB to the iPOS TC.

   When installation is complete, the following message appears:
   STATUS: Upload completed successfully.
8. Select `OK` on the host computer to return to the main window, then select `OK` again to close the TC IFB Installer application and save all changes made to the application's settings.

   Click `Cancel` to terminate the download process and return to the main window. Click `Cancel` again to terminate the application and discard all changes to the application's settings.

If the Download Fails

If an error occurs during download, re-start the process, including resetting the iPOS TC (this returns the iPOS TC to download mode after a download failure). When the iPOS TC enters download mode, it sends a download message once. Select the `Install` button on the host computer before the iPOS TC enters download mode; if the TC IFB Installer isn't waiting for the download message, it will miss the message.



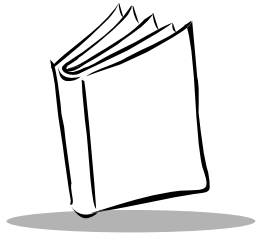
Appendix A
Technical Specifications

Table A-1. iPOS TC Technical Specifications

Item	Description
Physical Characteristics	
Dimensions	9.0 in. L x 7.25 in. W x 2.88 in. H/ 230 mm L x 180 mm W x 70 mm H
Weight	2 lb 6 oz/1.077 kg
Display	High contrast, color backlit LCD
LCD Size	4.5 in. L x 3.5 in. W; 5.7 in. diagonal/ 114.3 mm L x 88.9 mm W; 144.8 mm diagonal
LCD Resolution	Color 1/4 VGA, 320 L x 240 W
Touch Pad Resolution	1024 x 1024 x, y coordinates (207 Hori. x 286 Ver. dpi)
Network Connectivity	PCMCIA Type II adapter; onboard 10-Base T Ethernet
Power Requirements	Regulated 12V DC, 1A rating
Power Source	12V DC regulated, Domestic 120V AC input; 12V DC regulated from ECR; 12V DC, 1A rating Universal Power Adapter
Terminal Interface	Auto detect and auto selection of RS-232 or RS-485; one RS-232 port; one RS-485 (supports IBM Tailgate protocol); one self-powered USB slave port (supports 3 endpoints); one aux port for RS-232 passthrough

Table A-1. iPOS TC Technical Specifications (continued)

Item	Description
Performance Characteristics	
Memory	ROM: 8MB Flash Memory (expandable up to 32MB) RAM: 64MB SDRAM
Magnetic Stripe Reader	Bi-directional 3 track reader
Security	Triple DES or DES PIN Encryption with Master/Session or DUKPT for key management
Firmware	Real time operating system: RTOS environment and PersonalJava Virtual Machine Transaction applications: posPortal
Peripherals and Accessories	
@pos TC Software Suite (Optional)	posBuilder, posVisual, IBM 4690 SDK Operating systems supported: DOS, Windows 98/2000 and NT 3.51 or higher, IBM 4680/4690 Formats supported: BMP and JPG for graphics, SIG, CMP and VBC for signature Object tools: Support for VBX, ActiveX, OPOS and JPOS
Smart Card Interface (Optional)	ISO 7816 - 1, 2, 3, 4 synchronous and T=0, T=1 asynchronous cards; EMV level 1 certified
Regulatory	
Electrical Safety	CE, UL
EMI/RFI	FCC Class A



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What topics need to be added to the index, if applicable?

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What topics do you feel need to be better discussed? Please be specific.

_____
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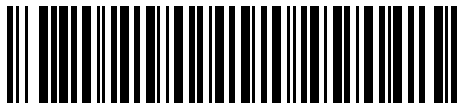
What can we do to further improve our manuals?

_____
_____

Thank you for your input—We value your comments.

iPOS TC Product Reference Guide



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