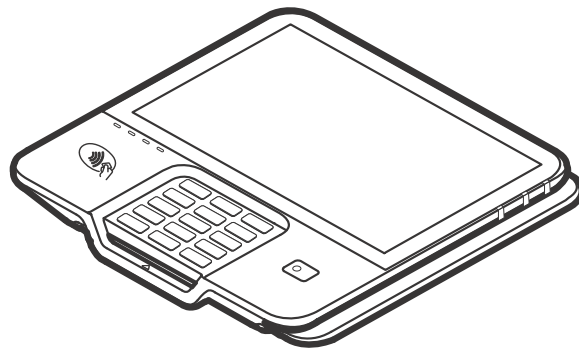


# M440

## *Installation Guide*



M440 Installation Guide  
© 2019 Verifone, Inc.

All rights reserved. No part of the contents of this document may be reproduced or transmitted in any form without the written permission of Verifone, Inc.

The information contained in this document is subject to change without notice. Although Verifone has attempted to ensure the accuracy of the contents of this document, this document may include errors or omissions. The examples and sample programs are for illustration only and may not be suited for your purpose. You should verify the applicability of any example or sample program before placing the software into productive use. This document, including without limitation the examples and software programs, is supplied "As-Is."

Verifone, and the Verifone logo are registered trademarks of Verifone.

Other brand names or trademarks associated with Verifone's products and services are trademarks of Verifone, Inc. All other brand names and trademarks appearing in this manual are the property of their respective holders.

**Product Warranty**

For product warranty information, go to <http://www.verifone.com/terms>.

**Comments?** Please e-mail all comments in this document to your local Verifone Support Team.

Verifone, Inc.  
1-800-Verifone

[www.verifone.com](http://www.verifone.com)



**CONTENTS**

|                                     |          |
|-------------------------------------|----------|
| <b>PREFACE</b>                      | <b>5</b> |
| Audience                            | 5        |
| Organization                        | 5        |
| Related Documentation               | 5        |
| Guide Conventions                   | 6        |
| Acronym Definitions                 | 7        |
| <br><b>CHAPTER 1</b>                |          |
| <b>Device Overview</b>              |          |
| Features and Benefits               | 11       |
| Exceptional Ease of Use             | 11       |
| Performance and Durability          | 11       |
| Security                            | 11       |
| Contactless Capability              | 11       |
| Communication Technology            | 11       |
| <br><b>CHAPTER 2</b>                |          |
| <b>Setup</b>                        |          |
| Device Location                     | 13       |
| Ease of Use                         | 13       |
| Environmental Factors               | 13       |
| Electrical Considerations           | 14       |
| Contactless Considerations          | 14       |
| PIN Protection Measures             | 14       |
| Mounting Considerations             | 15       |
| Inside the Shipping Carton          | 15       |
| Device Features                     | 18       |
| Front Panel                         | 18       |
| Connection Ports                    | 19       |
| Connecting Cables and other Devices | 19       |
| M440 Connection Options             | 20       |
| Powered Multiport Cable             | 20       |
| MSAM Card                           | 20       |
| Device Power Source                 | 21       |
| Smart Card Reader                   | 22       |
| Magnetic Card Reader                | 22       |
| Contactless Smart Card Transaction  | 23       |
| M440 Wi-Fi/BT Support               | 23       |
| Bluetooth Support                   | 23       |
| Wireless Transaction                | 24       |
| Optional Accessories                | 24       |
| Privacy Shield                      | 24       |
| Stand                               | 25       |
| External and Optional Devices       | 27       |
| Accessories and Documentation       | 28       |
| Accessories                         | 28       |

**CHAPTER 3**  
**Specifications**

|                                     |    |
|-------------------------------------|----|
| Power Rating .....                  | 29 |
| Power Pack .....                    | 29 |
| Temperature .....                   | 29 |
| External Dimensions .....           | 29 |
| Weight .....                        | 29 |
| Processors .....                    | 29 |
| Memory .....                        | 29 |
| Display .....                       | 29 |
| Magnetic Card Reader .....          | 29 |
| Primary Smart Card .....            | 29 |
| MSAM Card Reader .....              | 30 |
| Integrated Contactless Reader ..... | 30 |
| Keypad .....                        | 30 |
| Audio Jack .....                    | 30 |
| Peripheral Ports .....              | 30 |
| Security .....                      | 30 |

**CHAPTER 4**  
**Maintenance and**  
**Cleaning**

|                                     |    |
|-------------------------------------|----|
| General Care .....                  | 31 |
| Additional Safety Information ..... | 32 |
| Surface Cleaning .....              | 32 |
| Smart Card Reader Cleaning .....    | 32 |
| Magnetic Stripe Cleaning .....      | 33 |
| Using the Battery .....             | 33 |

**CHAPTER 5**  
**Service and Support**

|                       |    |
|-----------------------|----|
| Service Returns ..... | 35 |
|-----------------------|----|

**CHAPTER 6**  
**Troubleshooting**  
**Guidelines**

|                                                          |    |
|----------------------------------------------------------|----|
| Device Does Not Start .....                              | 37 |
| Device Display Does Not Show Correct/Readable Info ..... | 37 |
| Blank Display .....                                      | 38 |
| Keypad Does Not Respond .....                            | 38 |
| Transactions Fail to Process .....                       | 38 |



This guide is the primary source of information for setting up and installing the Verifone M440 device.

**Audience** This guide is useful to anyone installing and configuring the device.

**Organization** This guide is organized as follows:

[Chapter 1, Device Overview](#). Provides an overview of the Verifone M440 device.

[Chapter 2, Setup](#). Explains setup and installation of the device, selecting a location, and establishing connections with other devices.

[Chapter 3, Specifications](#). Discusses power requirements and dimensions of the device.

[Chapter 4, Maintenance and Cleaning](#). Explains maintenance of the device.

[Chapter 5, Service and Support](#). Provides information on contacting your Verifone service provider and information on how to order accessories or documentations from Verifone.

[Chapter 6, Troubleshooting Guidelines](#). Provides troubleshooting guidelines should you encounter a problem in device installation and configuration.

**Related Documentation** Refer to the following set of documents to learn more about the device:

|                                             |                     |
|---------------------------------------------|---------------------|
| <i>M440 Certifications and Regulations</i>  | VPN - DOC379-001-EN |
| <i>M440 Series Quick Installation Guide</i> | VPN - DOC379-002-EN |

Guide  
Conventions

Various conventions are used to help you quickly identify special formatting. Table 1 describes these conventions and provides examples of their use.

Table 1 Document Conventions

| Convention                                                                                           | Meaning                                                                     | Example                                                                      |
|------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|------------------------------------------------------------------------------|
| Blue                                                                                                 | Text in blue indicates terms that are cross references.                     | See <a href="#">Guide Conventions</a> .                                      |
| <i>Italics</i>                                                                                       | Italic typeface indicates book titles or emphasis.                          | You <i>must</i> not use this unit underwater.                                |
| <b>NOTE</b><br>     | The pencil icon is used to highlight important information.                 | RS232-type devices do not work on the M440 communication port.               |
| <b>CAUTION</b><br>  | The caution symbol indicates hardware or software failure, or loss of data. | The unit is not waterproof or dustproof and is intended for indoor use only. |
| <b>WARNING</b><br> | The lightning symbol is used as a warning when bodily injury might occur.   | Do not use the device near water due to risk of shock.                       |

**Acronym Definitions** Acronyms are used in place of the full definition. [Table 2](#) presents acronyms and their definitions.

**Table 2 Acronym Definitions**

| Acronym | Definitions                                                                                                                                                                  |
|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| AES     | Advanced Encryption Standard Algorithm                                                                                                                                       |
| ARM     | Advanced RISC Machine                                                                                                                                                        |
| CTLS    | Contactless Reader                                                                                                                                                           |
| DUKPT   | Derived Unique Key Per Transaction Method as defined in the VISA's POS Equipment Requirement: PIN processing and Data Authentication, International Version 1.0, August 1988 |
| ECR     | Electronic Cash Register                                                                                                                                                     |
| EMV     | Joint Europay, MasterCard and Visa Standard                                                                                                                                  |
| MSAM    | Multiple Secure Access Module                                                                                                                                                |
| MSR     | Magnetic Swipe Reader                                                                                                                                                        |
| NFC     | Near Field Communication                                                                                                                                                     |
| PIN     | Personal Identification Number                                                                                                                                               |
| POS     | Point-of-Sale                                                                                                                                                                |
| QR Code | Quick Response Code                                                                                                                                                          |
| SAM     | Secure Access Module                                                                                                                                                         |
| SCR     | Smart Card Reader                                                                                                                                                            |
| SRED    | Secure Reading and Exchange of Data                                                                                                                                          |
| USB     | Universal Serial Bus                                                                                                                                                         |
| Wi-Fi   | Wireless Fidelity                                                                                                                                                            |



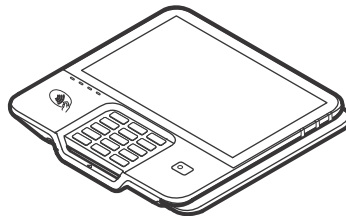
## Device Overview

This chapter provides a brief description of the Verifone M440 device.

The Verifone M440 device is a best-in-class, single-screen media-capable and consumer-facing device, which allows electronic payment transactions to be processed in multi-lane scenarios. This payment processing solution with a fully integrated POS can scan barcodes, QR codes and products with the help of integrated camera.

In combination with Verifone Connect digital services, it offers self-check-out/self-check-in, payment, and the ability to run Android applications, like loyalty and inventory. It also enables clients to remotely monitor and update their device using Verifone's estate management solution. The Verifone M440 device supports Bluetooth and Wi-Fi, and meets PCI-PTS 5.X SRED requirements for maximum security.

The Verifone M440 device supports all payment methods - magnetic stripe, EMV, and NFC/Contactless Reader, including Apple Pay, Google Pay, and Samsung Pay mobile wallets. The easy to read color touch screen supports all payment related user interactions and keypad for secure PIN entry.



**Figure 1**      **M440 Device**

## Key Features and Benefits

| M440 Features           |                                                                                                                                                                                                                             |
|-------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Processor</b>        | <ul style="list-style-type: none"> <li>1.1 GHz, Arm Cortex-A7 quad-core</li> <li>Dedicated secure processor</li> </ul>                                                                                                      |
| <b>Memory</b>           | <ul style="list-style-type: none"> <li>1 GB RAM (option for 2 GB)</li> <li>8 GB Flash (option for 16 GB)</li> <li>Secure processor: 512 MB DRAM, 512 MB Flash</li> </ul>                                                    |
| <b>Display</b>          | <ul style="list-style-type: none"> <li>8-inch (172.22 X 107.64) HD IPS LCD Touch screen</li> </ul>                                                                                                                          |
| <b>Keypad (touch)</b>   | <ul style="list-style-type: none"> <li>Dedicated mechanical keypad and on-screen (touch) keypad.</li> </ul>                                                                                                                 |
| <b>Payment</b>          | <ul style="list-style-type: none"> <li>Magnetic Swipe Reader (MSR)</li> <li>Smart Card Reader (SCR)</li> <li>Contactless Reader (CTLS)</li> <li>Near Field Communication (NFC)</li> <li>Quick Response (QR) code</li> </ul> |
| <b>Communication</b>    | <ul style="list-style-type: none"> <li>Bluetooth 4.2 BLE</li> <li>2.4 GHz + 5 GHz Wi-Fi, 802.11 a, b, g, n</li> </ul>                                                                                                       |
| <b>Peripheral Ports</b> | <ul style="list-style-type: none"> <li>Custom Multiport Interface</li> </ul>                                                                                                                                                |
| <b>Camera</b>           | <ul style="list-style-type: none"> <li>5 MP (front QR/Barcode Scanner)</li> <li>Auto-focus</li> <li>Fast scanner</li> </ul>                                                                                                 |
| <b>Security</b>         | <ul style="list-style-type: none"> <li>PCI PTS 5.x-approved</li> <li>SRED</li> <li>Supports AES DUKPT</li> </ul>                                                                                                            |
| <b>SIM/SAM</b>          | <ul style="list-style-type: none"> <li>2 Standard SAM</li> </ul>                                                                                                                                                            |
| <b>Environmental</b>    | <ul style="list-style-type: none"> <li>Operating temperature: 0° to 50° C (32° to 122° F)</li> <li>Storage temperature: -20° to 60° C (-4° to 140° F)</li> <li>Relative humidity: 5% to 95% Non-condensing</li> </ul>       |

## Features and Benefits

Following are the features and benefits.

### Exceptional Ease of Use

- Large 8" LCD display for unlimited application possibilities and easy readability under various lighting conditions.
- Touchscreen for icon-based applications or electronic signature capture support.
- Intuitive telco-style keypad with colored control keys.
- Bi-directional magnetic stripe card reader with an extended blade for optimal card reading.
- Audio jack to facilitate accessibility for the visually impaired.

### Performance and Durability

- Fast transactions due to powerful 1 GHz ARM Cortex quad-core ARM Cortex-A7 1.1GHz processor.
- Rounded corners and drop resistant to less than 1m on concrete floor to minimize breakage.
- 16GB of Flash memory and 2GB SDRAM.
- This device is IP53 rated while on a stand between zero and forty five degrees inclined.

### Security

- Incorporates tamper-sensing circuitry to detect unauthorized intrusion and supports a broad spectrum of software-based security features.
- PCI-PTS 5.x approved for debit and other PIN-based transactions.
- EMV Level 1 Type Approval.
- Supports reliable security features including TLS, VeriShield file authentication, and VeriShield Protect to help prevent fraud and other intrusions.

### Contactless Capability

- Advanced contactless architecture that future-proofs investment with a single contactless interface (SingleCI), SoftSAMs, and side-by-side application architecture.
- Dedicated tap zone for optimized user experience.
- Accepts EMV, NFC, QR Code and mag-stripe contactless payments as well as PIN-based transactions.

### Communication Technology

- Bluetooth: Simple, plug-and-play installation for locations that need short-range wireless capability. Eddystone and iBeacon profiles are also supported.
- Wi-Fi: Ideal for retailers that need multiple wireless devices and have an existing IP infrastructure.



## Setup

This chapter describes the setup procedure for:

- Device Location.
- Inside the Shipping Carton.
- Device Features.
- Connection Ports.
- M440 Connection Options.
- MSAM Card.
- Device Power Source.
- Smart Card Reader.
- Magnetic Card Reader.
- Contactless Smart Card Transaction.
- M440 Wi-Fi/BT Support.
- Optional Accessories.

### Device Location

The following are guidelines used to select an ideal location for the device.

- The device must be used in an attended environment.

#### **Ease of Use**

- Select a location convenient for both merchant and cardholder.
- Select a flat support surface less than two meters high, such as a counter top or table, or secure the device on a stand mount supplied by Verifone.
- Select a location near a power outlet, POS, ECR, or computer connected to the device. For safety, do not string cables or cords across a walkway.

---

#### **NOTE**



- The M440 device must be mounted only on Verifone approved stands.
  - The device is suitable for mounting only at height less than or equal to 2 meters.
- 

#### **Environmental Factors**

- Do not use the device where there is excess heat, dust, humidity, moisture, caustic chemicals or oils.
- The device is IP53 rated and designed to be used in dusty or moist environment when mounted to a stand.
- Keep the device away from direct sunlight and anything that radiates heat, such as a stove or a motor.

- Do not use the device outdoors.

### Electrical Considerations

- Avoid using this product during electrical storms.
- Avoid locations near electrical appliances or other devices that cause excessive voltage fluctuations or emit electrical noise (for example, air conditioners, electric motors, neon signs, high-frequency or magnetic security devices, or computer equipment).
- Avoid using the device near water or in moist conditions.
- Disconnect the device from its POS device before cleaning.

#### WARNING



Do not use the device near water, including a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool to avoid shock or damage.

### Contactless Considerations

Avoid having metallic objects in proximity of the contactless antenna. If you need to mount the device to vertical or inclined surfaces, use Verifone approved stand.

#### CAUTION



Using an enclosed metal frame or mount may negatively affect contactless performance.

### PIN Protection Measures

Use the following techniques to provide effective screening of the PIN-entry keypad during the PIN entry process. You can use these methods in combination, although in some cases a single method might suffice.

- Position the device on the check-in stand in such a way as to block visual observation of the PIN-entry process. Examples include:
  - Visual shields designed into the check-in stand. The shields may be solely for shielding purposes or may be part of the general check-in stand design.
  - Position the device so that it is angled in such a way that PIN spying is difficult.
- Install the PED on an adjustable stand that allows consumers to swivel the device sideways and/or tilt it forwards/backwards to a position that makes visual observation of the PIN-entry process difficult.
- Position in-store security cameras so that the PIN-entry keypad is not visible.
- This risk of shoulder-spying during PIN entry can be significantly reduced by installing the optional approved privacy shield.

The following table describes the two preferred mounting methods and the recommended measures to protect against PIN capture in four observation corridors:

**Table 3 Mounting Methods and Protection Measures**

| Method                   | Cashier                    | Customer in Queue                                         | Customers Elsewhere | On-site Cameras                       |
|--------------------------|----------------------------|-----------------------------------------------------------|---------------------|---------------------------------------|
| Countertop without stand | Use signage behind the PED | Install so that customer is between PED and next in queue | No action needed    | Do not install within view of cameras |
| Countertop with stand    | No action needed           | Install so that customer is between PED and next in queue | No action needed    | Do not install within view of cameras |

Verifone also recommends instructing the cardholder regarding safe PIN-entry. This can be done with a combination of:

- Signage on the PED
- Prompts on the display, possibly with a click-through screen
- Literature at the point of sale
- A logo for safe PIN-entry process.
- You can secure PIN entry by installing a [Privacy Shield](#) (optional).

### Mounting Considerations

Verifone recommends the use of an approved stand for all mounting situations. Position the device conveniently in relation to power, POS, ECR, and LAN connections. Ensure the M440 device is located in a manner that allows customers to swipe their magnetic cards or insert their Smart Cards in a smooth and comfortable motion without encountering obstructions. If the unit needs to be swiveled during normal operation, Verifone recommends the use of an approved swivel stand.



#### NOTE

Special care is required when mounting the M440 device in sites that utilize anti-theft devices positioned at doorways or surface mounted deactivator pads. Devices of this type, such as Sensormatic brand devices generate strong electromagnetic fields, which may interfere with M440 device. Always select mounting locations at least 0.5 meter from doorway units and at least 2.0 meters from surface mounted deactivator pads.

### Inside the Shipping Carton

Open the shipping carton and carefully inspect its contents for possible tampering or shipping damage. The device is a secure product. Tampering causes it to cease to function or to operate in an unsecured manner.

### Unpacking the Shipping Carton

To unpack the shipping carton:

- 1 Carefully inspect the shipping carton and its contents for possible tampering or damage.

- 2 Validate the authenticity of the sender by verifying the shipping tracking number and other information located on the product order paperwork.
- 3 Remove and inspect the contents of the shipping carton. The device ships in multiple configurations, the carton may include all or any of the following:
  - Device
  - Connectivity cable
  - Additional accessories

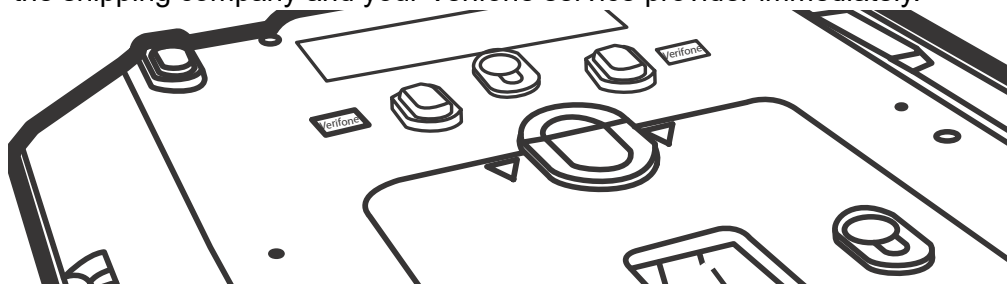


Power supply and connectivity cables are shipped separately or depending on the customer requirements.

- 4 Remove all plastic wrapping from the device and components.
- 5 Remove the clear protective film from the display.
- 6 Inspect the terminal for possible tampering; see how to identify signs of tampering in section Periodic Inspection.
- 7 Save the shipping carton and packing material for future repacking or moving of the device.



Do not use a tampered or damaged unit. The device comes equipped with tamper-evident labels. If a label or component appears damaged, please notify the shipping company and your Verifone service provider immediately.



**Periodic Inspection** Periodically inspect the terminal for possible tampering. Signs of tampering include:

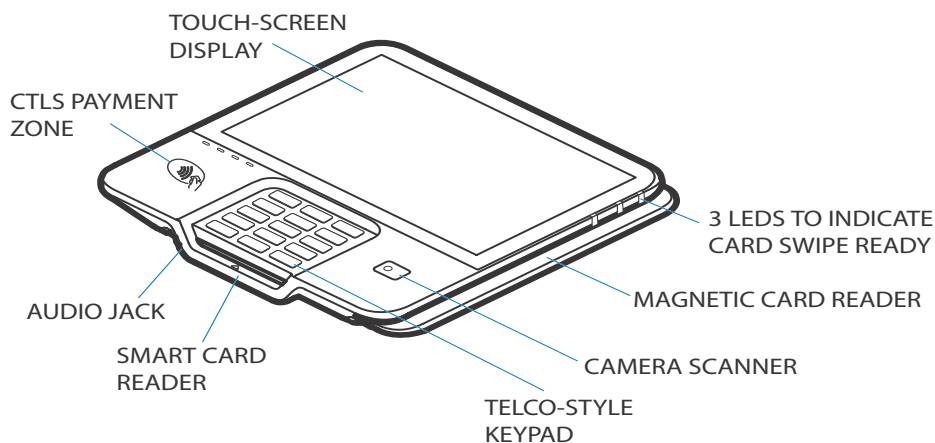
- Overlays in the PIN pad area
- Wires protruding out of the device
- Foreign objects inserted into the smart card slot or magnetic stripe slot
- Any bumps in the casing below the mag stripe slot and any noticeable additional mag stripe head from the side
- Signs of damage to the tamper-evident labels
- A Tamper Warning message on the device display

If any device is found to have been tampered with, please remove it from service immediately, keep it available for potential forensics investigation, and notify your company security officer and your local Verifone representative or service provider. To contact Verifone, please see [Service and Support](#).

For terminals equipped with a privacy shield, perform daily inspections to ensure that the privacy shield is installed and has not been removed.

## Device Features

Familiarize yourself with the device features before continuing with the installation process:



**Figure 2 M440 Features**

**Front Panel** The front panel offers the following features:

- The Verifone M440 device has a colored touch screen Display.
- A smart card reader built into the front of the device to process smart card-based debit or credit transactions. For directions on how to use a smart card, see [Using the Smart Card Reader](#).
- A magnetic card reader built into the device for performing debit or credit card transactions. The card can be swiped from either direction. To ensure a proper read of the magnetic swipe card, insert the magnetic card from the side of the device as shown in [Figure 11](#).
- Contactless Reader and EMV have dedicated LEDs lower to the left of the display for contactless payments. For directions on how to conduct contactless transactions, see [Using the Contactless Reader](#).
- A 3.5 mm audio jack to facilitate accessibility for the visually impaired.

**NOTE**



On screen PIN entry is NOT supported.

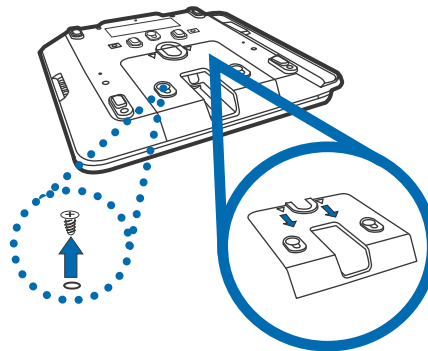
## Connection Ports

The device has one custom multiport interface for power and communications connection.

### Connecting Cables and other Devices

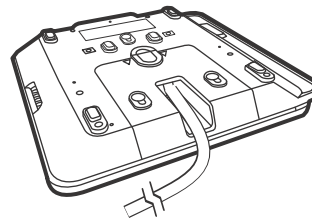
To connect required cable connections and other devices:

- 1 Unscrew and remove cable cover as shown below.



**Figure 3 Removing Cable Cover**

- 2 Connect required cable connections or optional devices. Attaching the multiport cable provides multiple connection options.



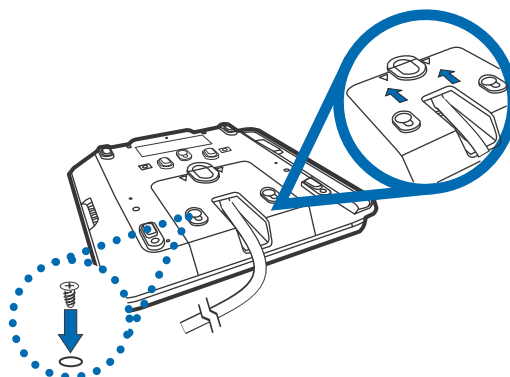
**Figure 4 Multiport Cable Connected on the Rear of the Unit**

#### NOTE



Route the multiport cable through the cable cover first, as shown in the picture.

- 3 Close cable compartment as shown below.



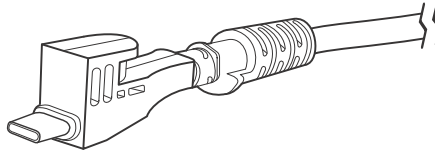
**Figure 5 Closing Cable Compartment with Cable Cover**

## M440 Connection Options

The M440 device can be connected to other systems using several methods. They all connect to the M440 using the Multiport cable connected on the rear of the unit.

### Powered Multiport Cable

Powered Multiport Cable provides USB signal connectivity and power. It provides a convenient way of connecting other systems of the same type.



**Figure 6**      **Powered Multiport Cable**

### MSAM Card

You may need to install one or two Multiple Security Access Module (MSAM) cards or replace an old one.



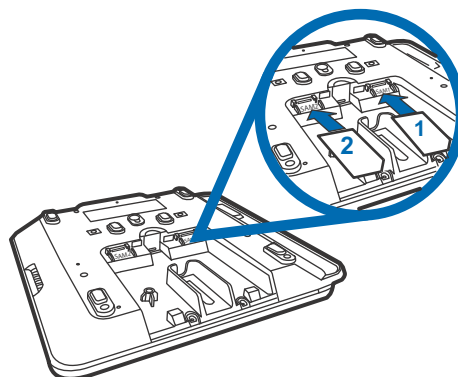
#### CAUTION

Observe standard precautions in handling electrostatically sensitive devices. Electrostatic discharge can damage the equipment. Verifone recommends using a grounded anti-static wrist strap.

#### *Installing or Replacing MSAM Card*

To install or replace MSAM cards:

- 1** Power off the device.
- 2** Place the device face down on a soft and clean surface.
- 3** Remove the cable cover of the unit.
- 4** Insert the MSAM cards. Carefully slide the cards one at a time into the slots until fully inserted. The correct orientation of the MSAM card is as indicated in the figure 7.
- 5** Close the cable cover.



**Figure 7 MSAM Insertion**



Position the card's gold contacts facing downward toward the user. The card slot in the device has a set of contacts. The MSAM card has a notch on one corner to ensure that it fits into the connector base in only one way.

To replace SAM card, gently slide out the old SAM card before inserting a new one.

## Device Power Source

The device is powered by an external AC/DC power pack. When you have finished installing the necessary cards and/or optional devices, you are ready to connect the device to the power source.

The device requires connection to a power outlet with a dedicated circuit or an uninterruptible power supply (UPS). If other devices are plugged into the same circuit, the device can potentially experience power fluctuations that might cause malfunction. The device shuts down automatically once power source is removed.



**WARNING** Do not connect the device to the power supply until all peripherals are attached.

Using an incorrectly rated power supply can damage the unit or cause it not to work properly. Use only a power pack with P/N PWR445-001-1-A. See [Specifications](#) for detailed power supply specifications.

Do not plug the power pack into an outdoor outlet or operate the device outdoors. Disconnecting power during a transaction can also cause unsaved data files to be lost.



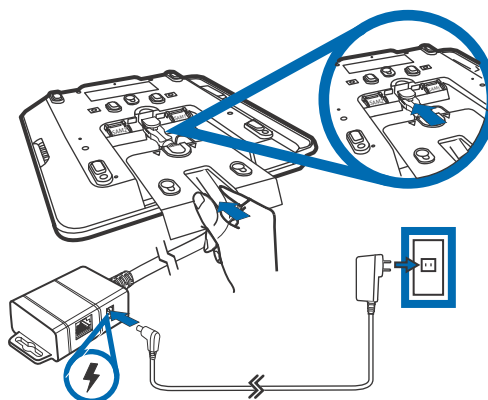
Verifone recommends installing a power surge protector to protect against possible damage caused by lightning strikes and electrical surges.

## Connecting M440 Device to a Power Source

To connect M440 device to a power source:

- 1 Connect the Multiport cable (Example MSC445-010-00-A) to the Multiport at the back of the device.

- 2 Close cable cover.



**Figure 8 Connecting Base Cable to Device**

- 3 Plug in power supply to the power connection port on the base module.
- 4 Plug the AC power cord into a wall outlet or power surge protector.

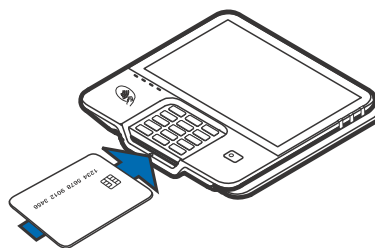
## Smart Card Reader

The smart card transaction procedure can vary depending on the application. Verify the proper procedure with your application provider before performing a smart card transaction.

### Using the Smart Card Reader

To use the smart card reader:

- 1 Position the smart card with the gold contacts facing upward.
- 2 Insert the card into the smart card reader slot in a smooth, continuous motion until it sets firmly.



**Figure 9 Smart Card Reader**

- 3 Remove the card only when the display indicates the transaction is complete.



Leave the smart card in the card reader until the transaction is completed. Premature card removal can invalidate a transaction.

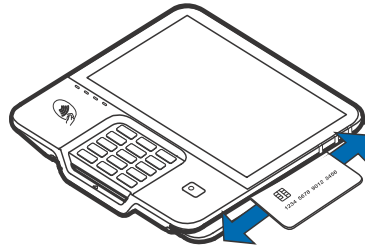
## Magnetic Card Reader

The device has a magnetic card reader that uses a triple track stripe reader. This gives the unit greater reliability over a wide range of swipe speeds and operating environments.

### Using the Smart Card Reader (Credit/Debit Card Transaction)

To use the smart card reader (credit/debit card transaction):

- 1 MSR indicator lights will flash when ready to accept MSR transaction.
- 2 Position a magnetic card with the stripe to face downward, as shown in Figure 10.
- 3 Swipe the card through the magnetic card reader.



**Figure 10 Using the Magnetic Card Reader**

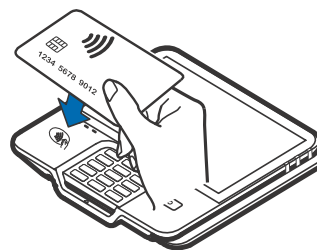
### Contactless Smart Card Transaction

The device supports contactless transactions through an integrated contactless module. The device only becomes active for contactless smart card transactions when initialized by an application.

### Performing a Contactless Smart Card Transaction

To perform a contactless smart card transaction:

- 1 Gently tap the card onto payment device or hold the card within 4 cm against the surface of the device on the left side of keypad above the Contactless Reader icon.
- 2 Activated LED icons accompanied by a short beeping sound indicates a successful transaction.



**Figure 11 Contactless Smart Card Transaction**



Do not allow metallic surfaces to come in contact with the contactless module to ensure that it works properly.

### M440 Wi-Fi/BT Support

The M440 device includes an integrated WLAN RF transceiver for Wireless LAN systems with advanced power management, and an integrated radio transceiver for Bluetooth wireless systems.

### Bluetooth Support

Supports BR/EDR and LE, including Eddystone and iBeacon.

### Wireless Transaction

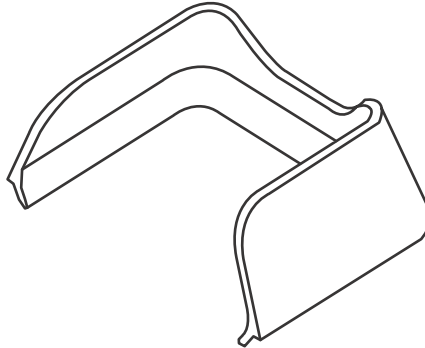
M440 supports wireless transactions. Wireless transactions occur when initialized by an application.

### Optional Accessories

These accessories can be used to further enhance the device's functionality. See Chapter 2, section [Accessories and Documentation](#) for list of part numbers for additional information.

### Privacy Shield

The privacy shield is used to deter the visual observation of PIN values as they are being entered by the cardholder during a transaction.

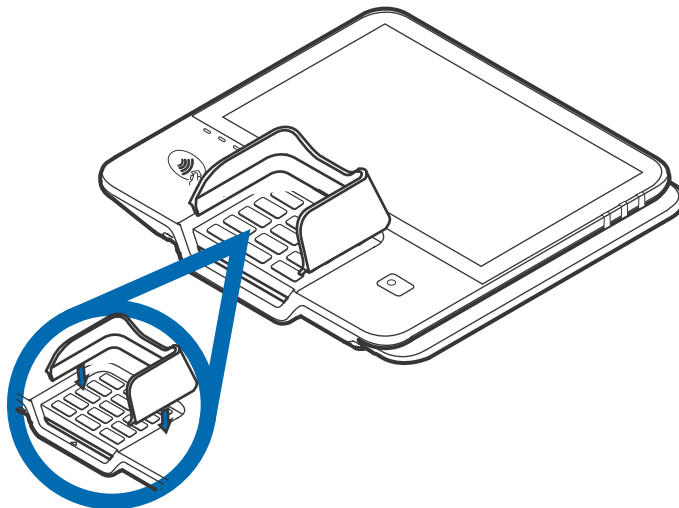


**Figure 12 M440 Privacy Shield**

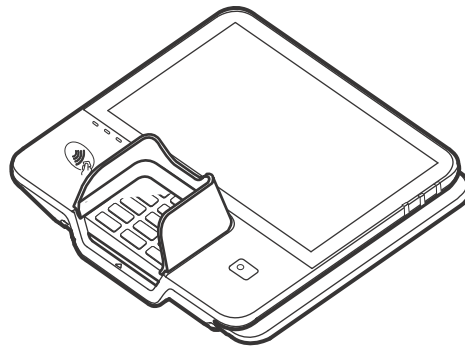
### Installing the Privacy Shield

To install a privacy shield:

- 1 Ensure the device's surface is clean and free of dirt or debris.
- 2 Remove release liner and adhere the privacy shield by aligning the shield into the keypad recess in a downward motion.
- 3 Press down firmly and hold for thirty seconds to ensure adhesive bonding.

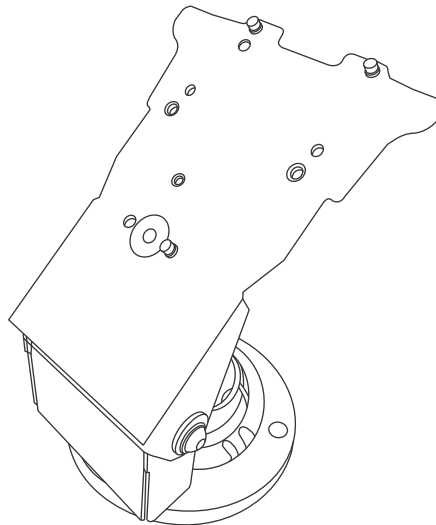


**Figure 13 Installing the Privacy Shield**



**Figure 14 Privacy Shield attached to Device**

**Stand** A mounting device that serves as the device's docking station and adds support during customer PIN-entry. The stand can be positioned on a countertop and can be adjusted during transactions for privacy.

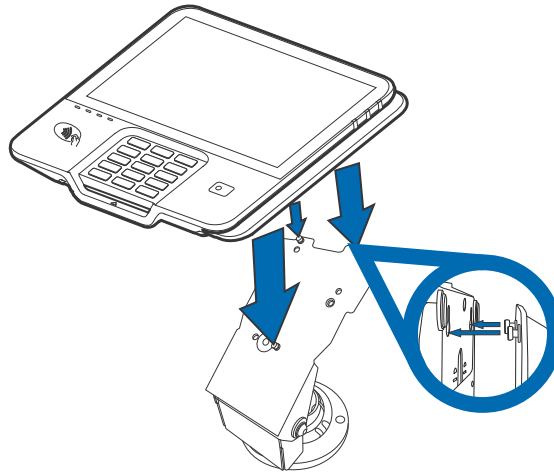


**Figure 15 M440 Series Stand**

### ***Docking the Device on the Stand***

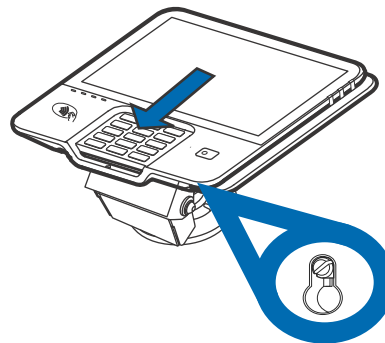
To dock the device on the stand:

- 1 Place the device on the base. Ensure that the stand screws align with the keyholes found at the back of the device.



**Figure 16 Docking Device onto the Stand**

- 2 Slide down device to lock in place.

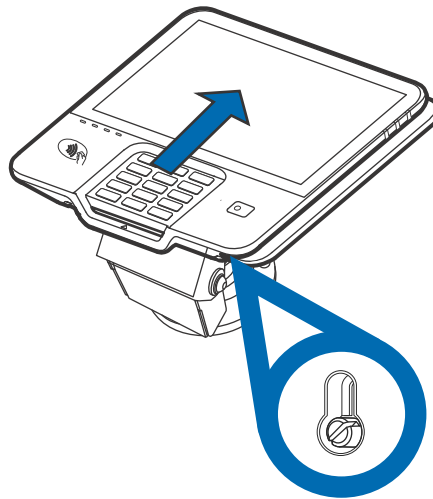


**Figure 17 Locking Device in Place**

### ***Undocking the Device from the Stand***

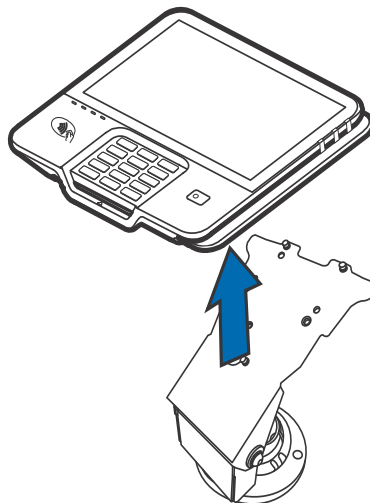
To undock the device from the stand:

- 1 Slide the device upward to unhook the device from the stand.



**Figure 18 Undocking Device from the Stand**

- 2 Lift device off the stand.



**Figure 19 Lifting Device off the Stand**



When conducting customer transactions, the stand orientation can be adjusted for convenience and security.

### External and Optional Devices

Multiple cable configurations are provided for the M440 device that supports peripheral devices designed for use with electronic point-of-sale system such as ECR, cash drawer, barcode scanner, external keyboard, weighing scale, external printer, external speakers, and a USB connection.



Remove the power cord from the multiport cable before connecting any peripheral device. Reconnect the power cord only *after* you have finished connecting the peripheral device(s).

## Accessories and Documentation

Verifone produces the following accessories and documentation for the M440. When ordering, please take note of the part number.

- Verifone online store at [www.estore.verifone.com](http://www.estore.verifone.com)
- USA – Verifone Customer Development Center, 800-Verifone (837-4366), Monday - Friday, 7 A.M. - 8 P.M., Eastern time
- International – Contact your Verifone representative

### Accessories

Below are accessories used with your device. Contact your Verifone distributor to determine which of the accessories fit your requirements.

**Table 4 Accessories and VPNs**

| Part Number     | Description        |
|-----------------|--------------------|
| MSC445-0XX-01-A | Multiport Cables   |
| MET132-009-01-A | Multilane Stand    |
| PPL379-013-01-A | Stylus Holster     |
| PPL379-014-01-A | Privacy Shield     |
| PWR445-001-01-A | M440 DC Power Pack |
| STY379-001-01-A | Passive Stylus     |
| VPN 02746-02    | MSR Cleaning kit   |



Specifications

This chapter discusses power requirements, dimensions, and other specifications of the device.

|                             |                                                                                                                                                                                                           |
|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Power Rating</b>         | <ul style="list-style-type: none"><li>• 12 V DC, 1 A</li></ul>                                                                                                                                            |
| <b>Power Pack</b>           | <ul style="list-style-type: none"><li>• PWR445-001-01-A</li><li>• UL/cUL, ITE listed, LPS power supply</li><li>• Input rated: 100-240 V AC, 50/60 Hz</li><li>• Output rated: 12 V DC, 1 A, 12 W</li></ul> |
| <b>Temperature</b>          | <ul style="list-style-type: none"><li>• Operating temperature: -0° to 50° C (32° to 122° F)</li></ul>                                                                                                     |
| <b>External Dimensions</b>  | <ul style="list-style-type: none"><li>• Length: 211 mm (8.29 in.)</li><li>• Width: 202 mm (7.92 in.)</li><li>• Depth: 29.5 mm (1.14 in.)</li></ul>                                                        |
| <b>Weight</b>               | <ul style="list-style-type: none"><li>• Unit weight: 695 grams</li></ul>                                                                                                                                  |
| <b>Processors</b>           | <ul style="list-style-type: none"><li>• 1.1 GHz, Arm Cortex-A7 quad-core</li><li>• Dedicated secure processor</li></ul>                                                                                   |
| <b>Memory</b>               | <ul style="list-style-type: none"><li>• 1 GB RAM (option for 2 GB)</li><li>• 8 GB Flash (option for 16 GB)</li><li>• Secure processor: 512 MB DRAM, 512 MB Flash</li></ul>                                |
| <b>Display</b>              | <ul style="list-style-type: none"><li>• 8-inch (172.22 X 107.64) HD IPS LCD Touch screen</li></ul>                                                                                                        |
| <b>Magnetic Card Reader</b> | <ul style="list-style-type: none"><li>• Triple track (tracks 1, 2, 3), high coercivity, bi-directional</li></ul>                                                                                          |
| <b>Primary Smart Card</b>   | <ul style="list-style-type: none"><li>• ISO 7816, 1.8 V, 3 V, 5 V</li><li>• Synchronous and asynchronous cards</li></ul>                                                                                  |

---

### **MSAM Card Reader**

---

- Two Security Access Modules (SAMs) card slots.

---

### **Integrated Contactless Reader**

---

- ISO 14443, ISO 18092, EMV, Felica

---

### **Keypad**

---

- 12-key Telco-style keypad
- Three color-coded function keys below the keypad

---

### **Audio Jack**

---

- 3.5 mm headphone jack

---

### **Peripheral Ports**

---

- Custom Multiport Cable

---

### **Security**

---

- Complies to PCI-PTS 5.x requirements, as well as many regional security requirements.



## CHAPTER 4

### Maintenance and Cleaning

The M440 device has no user-maintainable parts. It can, however, be cleaned.

#### General Care

Your device is a product of superior design and craftsmanship and should be treated with care. The following suggestions will help you protect your warranty coverage.

- Keep the device dry. Precipitation, humidity, and all types of liquids or moisture can contain minerals that will corrode electronic circuits. If your device does get wet, switch off the power, and allow the device to dry completely before replacing it.
- Do not use or store the device in dusty and dirty areas. Its moving parts and electronic components can be damaged.
- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries, and warp or melt certain plastics.
- Do not store the device in cold areas. Moisture can form inside the device and damage electronic circuit boards when the device returns to its normal temperature.
- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.
- Do not paint the device. Paint can clog the moving parts and prevent proper operation.
- Keep the device free from any small and loose items (such as paper clips, staples, or coins) that could accidentally get inside it through an opening, such as the SAM slots or the primary smart card reader slot.
- Do not attempt to open the device other than as instructed in this guide. This device has security features that protect it from tampering. For example, the file content will be deleted if the device's outer casing is opened.
- Use only the power adapter that came with your device. Adapters for other electronic devices may look similar, but they may affect your device's performance or damage it.
- Do not use this device in any area with a potentially explosive atmosphere. Follow all signs and instructions. Potentially explosive atmospheres include areas where you would normally be advised to turn off your vehicle engine. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

These suggestions apply equally to your device, or any of its attachments or accessories. If your device is not working properly, take it to the nearest authorized service facility for servicing or replacement. For your safety, have this device serviced only by a Verifone-authorized service provider.

## Additional Safety Information

The following are additional safety information in using this device.

### Surface Cleaning

To clean the device, use a clean cloth slightly dampened with water and a drop or two of mild soap. For stubborn stains, use alcohol or an alcohol-based cleaner.



Never use thinner, trichloroethylene, or ketone-based solvents – they can deteriorate plastic or rubber parts.

Do not spray cleaners or other solutions directly onto the device.

### Smart Card Reader Cleaning

The Smart Card Reader (SCR) must be cleaned on a regular basis, as dirt accumulation can lead to SCR reading problems. SCR can be cleaned using commercially available card reader cleaning cards or using recommended Verifone cleaning card (PN 02746-02).

#### Cleaning the SCR

To clean the SCR:

- 1 Inspect the device's SCR for presence of foreign objects before cleaning Customer Smart Card.
  - a If unit shows no presence of foreign objects, test the SCR function and record results. Proceed to [Step 2](#).



Send your device to a Verifone authorized repair center if foreign objects are found in the SCR at any time during SCR inspection, test diagnostics, or cleaning process. Removal of foreign objects from the SCR by customers may void device warranty.

- 2 Clean the SCR with approved or recommended Verifone cleaning card. It is always advised to use new cleaning cards at all times.



If using a commercially available cleaning card use ONLY an approved SCR cleaning card made specifically for POS SCR devices or Petroleum SCR.

- 3 Test the SCR after cleaning.
  - a If SCR tests out okay as “passing”, then the unit is ready for Customer Smart Card use.
  - b If SCR tests out as “failing”, then send the unit for repair. Provide details to repair center when SCR failed testing, either before cleaning OR after cleaning OR both before and after cleaning.

### **Magnetic Stripe Cleaning**

The Magnetic Stripe Reader (MSR) must be cleaned on a regular basis (daily to once a week, depending on usage), as dirt accumulation can lead to MSR reading problems. MSR can be cleaned using commercially available card reader cleaning cards or using recommended Verifone cleaning card (PN 02746-02).

---

#### **NOTE**



If using a commercially available cleaning card use **ONLY** an approved MSR cleaning card made specifically for POS MSR Card reader devices or Petroleum MSR card readers.

---

### **Using the Battery**

The Verifone M440 device uses an integrated circuit with a lithium battery having reverse-charge protection. The internal logic of the battery prevents both overcharging and undercharging (a fault condition in which the battery level goes well below the minimum acceptable charge and the battery becomes unusable).

---

#### **CAUTION**



There is a risk of explosion if the battery is replaced by an incorrect type.

---





## Service and Support

Contact your local Verifone representative or service provider for any problems on your device.

For product service and repair information:

- USA – Verifone Service and Support Group, 1-800-837-4366, Monday - Friday, 8 A.M. - 8 P.M., Eastern time.
- International – Contact your Verifone representative.

### Service Returns

You must obtain a Merchandise Return Authorization (MRA) number before returning the device to Verifone. The following procedure describes how to return one or more devices for repair or replacement (U.S. customers only).



For international customers, please contact your local Verifone representative for assistance with your service, return, or replacement.

#### *Returning One or More Devices for Repair or Replacement*

- 1 Gather the following information from the printed labels on the bottom of each device to be returned:
  - Product ID, including the model and part number. For example, “M440”, “M379-xxx-xx”, and “PTID xxxxxxxx.”
  - Serial number (S/N xxx-xxx-xxx).
- 2 Obtain the MRA numbers by completing the following:
  - Call Verifone within the United States toll-free at 1-800-Verifone and follow the automated menu options.
    - Select the MRA option from the automated message. The MRA department is open Monday–Friday, 8 A.M.–8 P.M., Eastern time.
    - Give the MRA representative the information gathered in [Step 1](#). If the list of serial numbers is long, you can fax the list, along with the information gathered in [Step 1](#), to the MRA department at 1-727-953-4172 (U.S.).
  - Address the fax clearly to the attention of the “Verifone MRA Dept.” Include a telephone number where you can be reached and your fax number.
  - Complete the Inquiry Contact Form at <https://www.verifone.com/en/us/contact-us>.
  - Address the Subject box with to “Verifone MRA Dept.”

- Reference the model and part number in the Note box

**NOTE**

One MRA number must be issued for each device you return to Verifone, even if you are returning several of the same model.

- 3 Describe the problem(s).
- 4 Provide the shipping address where the repaired or replacement unit must be returned.
- 5 Keep a record of the following items:
  - Assigned MRA number(s).
  - Verifone serial number assigned to the device you are returning for service or repair (serial numbers are located on the bottom of the unit).
  - Shipping documentation, such as air bill numbers used to trace the shipment.
  - Model(s) returned (model numbers are located on the Verifone label on the bottom of the device).

## Troubleshooting Guidelines

This chapter lists typical examples of malfunctions that you may encounter while operating your device and the steps that you can take to resolve them.

The troubleshooting guidelines provided in the following sections are included to assist successful installation and configuration of the device. Please read these troubleshooting examples if you are having problems operating your unit. Contact your local Verifone representative for assistance if the problem persists even after performing the outlined guidelines or if the problem is not described.



**NOTE**

The device comes equipped with tamper-evident labels. It contains no user-serviceable parts. Do not, under any circumstance, attempt to disassemble the unit. Perform only those adjustments or repairs specified in this guide. Contact your local Verifone service provider for all other services. Service conducted by parties other than authorized Verifone representatives may void any warranty.



**CAUTION**

All units require use of a power supply.

Use only a Verifone-supplied power pack. Using an incorrectly rated power supply may damage the unit or cause it not to work properly. Ensure that the power supply used to power the unit matches the requirements specified on the back of the unit (see [Specifications](#) for detailed power supply specifications) before troubleshooting. If not, obtain the appropriately rated power supply before continuing with troubleshooting.

### Device Does Not Start

- If the device does not start:
- Ensure that the device is plugged into a dedicated power source.
  - Check power cable connector is plugged in properly.

### Device Display Does Not Show Correct/Readable Info

- If the device display does not show correct/readable info:
- Check all cable connections. If the problem persists, contact your local Verifone representative for assistance.

## Blank Display

When the device display is blank:

- If the device display is dark, tap the screen with the stylus or your finger. If the unit was in screen-saver mode, the screen will turn on when touched.
- If the display does not show correct or readable information, check all cable connections. If the problem persists, contact your local Verifone representative for assistance.

## Keypad Does Not Respond

If the keypad does not respond properly:

- Check the device display. If it displays the wrong character or nothing at all when you press a key, follow the steps outlined in [Transactions Fail To Process](#).
- Refer to the user documentation for that application if pressing a function key does not perform the expected action to ensure you are entering data correctly.
- Contact your local Verifone representative if the problem persists.

## Transactions Fail To Process

There are several possible reasons why the unit may not be processing transactions. Use the following steps to troubleshoot failures.

### Checking Magnetic Card Reader

To check magnetic card reader:

- 1 Perform a test transaction using one or more different magnetic stripe cards to ensure the problem is not a defective card.
- 2 Ensure that you are swiping cards properly (see [Magnetic Card Reader](#)).
- 3 Process a transaction manually using the keypad instead of the card reader. If the manual transaction works, the problem may be a defective card reader.
- 4 Contact your local Verifone representative if the problem persists.

### Checking Smart Card Reader

To check smart card reader:

- 1 Perform a test transaction using several different smart cards to ensure the problem is not a defective card.
- 2 Ensure that the card is inserted correctly (see [Smart Card Reader](#)).
- 3 Ensure the MSAM cards are properly inserted in the slots and are properly secured (see [MSAM Card](#)).
- 4 Contact your local Verifone representative if the problem persists.





Verifone, Inc.  
1-800-Verifone  
[www.verifone.com](http://www.verifone.com)

# M440

## *Installation Guide*

