

# M<sup>x</sup>800 Series

## *Installation Guide*



M\*800 Series Installation Guide  
© 2005 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, the VeriFone logo, Omni, VeriCentre, Verix, and ZonTalk 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.

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

VeriFone, Inc.  
2099 Gateway Place, Suite 600  
San Jose, CA, 95110 USA

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

Part Number 23431, Revision B.2



## CONTENTS

<b>PREFACE</b>	<b>5</b>
Intended Audience	5
Document Organization	5
Conventions Used in This Document	5
Abbreviations	6
 <b>CHAPTER 1</b>	
<b>Features</b>	
Overview	7
Mx800 Series	7
Features and Benefits	8
Factory Options	9
Smart Card Module	9
Ethernet Module	9
Polarized Screen	9
Speakers	9
Optional Modules	9
Contactless Reader Module	10
Privacy Screen	10
Applications	10
Total Cost of Ownership	10
 <b>CHAPTER 2</b>	
<b>Installation</b>	
Installing the Device	13
Installing Countertop Wedge	15
Stand Mount	16
Installing Optional Modules	17
Installing Smart Card Modules	17
Installing SAM Cards – Additional Steps	18
Installing Trim Plate	18
Connecting the Device	19
Multiport Cable	19
Disconnecting Multiport	19
Connecting ECR in Tailgate Mode	20
Connecting to a Host PC	20
Connecting to the Ethernet LAN	21
Connecting to USB Host or Hub	21
Power Up with the Multiport Cable	21
Power Up without the Multiport Cable	22
 <b>CHAPTER 3</b>	
<b>Maintenance</b>	
Cleaning the Terminal	23
Smart Card Reader	23
 <b>CHAPTER 4</b>	
<b>Troubleshooting</b>	
Blank Display	25
Serial Port Does Not Work	25

	Transaction Fail to Process . . . . .	26
	No Response From the Stylus . . . . .	26
	Gap in Captured Signature . . . . .	26
	No Response From the Touch Panel . . . . .	27
<b>CHAPTER 5</b>		
<b>VeriFone Service</b>		
<b>and Support</b>		
	Return a Terminal for Service. . . . .	29
	Accessories . . . . .	31
	Optional I/O Modules . . . . .	31
	Optional Accessories . . . . .	31
	Cables. . . . .	31
	Documentation . . . . .	33
	Support Packages. . . . .	33
<b>CHAPTER 6</b>		
<b>Specifications</b>		
	Mx800 Series Terminal Specifications . . . . .	35
	<b>INDEX</b> . . . . .	A



This guide is your primary source of information for setting up and installing the M×800 Series family of terminals.

## Intended Audience

This guide is useful for anyone installing and configuring the M×800 Series series terminals. Basic description of the terminal features are also provided.

## Document Organization

This guide is organized as follows:

[Chapter 1, Features](#), explains the features of the M×800 Series series terminals.

[Chapter 2, Installation](#), explains the installation procedure of the M×800 Series series terminals.

[Chapter 3, Maintenance](#), explains how to maintain your M×800 Series series terminals.

[Chapter 4, Troubleshooting](#), provides trouble shooting guidelines, should you encounter a problem in terminal installation configuration.



[Chapter 5, VeriFone Service and Support](#), provides information on contacting your VeriFone representative or service provider. You will also find information on how to order accessories or documentation from VeriFone.

[Chapter 6, Specifications](#), provides information on power, environment and dimensions of the hardware.

## Conventions Used in This Document

The following table describes the conventions used:

**Table 1 Document Conventions**

Convention	Meaning
Blue	Text in blue indicates terms that are cross referenced.
Italics	Italic typeface indicates book titles or emphasis.
ScreenText	ScreenText format is used while specifying on screen text, such as text that you would enter at a command prompt, or to provide an URL.
	The pencil icon is used to highlight important information.
	The caution symbol indicates hardware or software failure, or loss of data.

## Abbreviations

The following table describes the Abbreviations used:

**Table 2**      **Abbreviations**

Convention	Meaning
ECR	Electronic Cash Register
DUKPT	Derived Unique Key Per Transaction
MRA	Merchandise Return Authorization
LAN	Local Area Network
PED	PIN Entry Device
RFID	Radio Frequency Identification
SAM	Security Access Module
TIFF	Tagged Image File Format
USB	Universal Serial Bus
VGA	Video Graphics Array

## Features

This chapter presents an overview and feature list for the M<sup>x</sup>800 Series.

The M<sup>x</sup>800 Series terminals are designed to offer multi-lane retailers outstanding flexibility with the help of the terminals' unique modular design. The terminals support a full line of payment and value-added applications such as loyalty or pre-paid cards. In addition, they are easy to use, secure, and highly reliable—backed by VeriFone's two decades of leadership in electronic payment.



VeriFone ships variants of the M<sup>x</sup>800 Series for different markets. Your terminal may have a different configuration.

### Overview

The M<sup>x</sup>800 Series terminal offers retailers the opportunity to efficiently mix the terminals within the same store or chain of stores—saving time and money on implementation, maintenance, and training.

Share the same architecture

Linux

Similar printed circuit boards.

Many of the same IBM, NCR, or Multipay (PP201) applications.

Upgrade modules

Terminals in different locations can be equipped with different modules, as needed.

Built-in upgradability protects a retailer's investment, allowing stores to adapt to changing trends.

Different cabling and power supplies

Reduces cost by simplifying implementation and maintenance.

Same mounting stands and wedges

Share the same keyhole pattern for secure mounting.

Similar footprint and “look and feel”

Offers consistency and simplifies training.

M<sup>x</sup>800 Series is operated exclusively by touch screen.

**M<sup>x</sup>800 Series** M<sup>x</sup>800 Series terminals offer outstanding flexibility due to the modular design. Modules that can be added include:

- Signature capture
- EMV smart cards



- Ethernet/USB (Universal Serial Bus) connectivity. USB port supports devices such as an electronic cash register (ECR) or PC that uses a USB connection
- Contactless smart cards using radio frequency identification (RFID) based on ISO 14443 standards.

The terminals support a full line of payment capabilities and feature an easy-to-use ATM style interface to reduce clerk errors and speed checkout lanes.

The Signature capture capability allows capture of virtual signatures, which are stored as tagged image file format (TIFF) files using capacitive touch technology.

As the M<sup>x</sup>800 Series terminal is operated exclusively by touch panel, VeriFone offers a signature capture stylus that uses capacitive touch screen technology.

The M<sup>x</sup>800 Series terminal is VeriFone's first 1/4 VGA payment devices. The terminals offer:

- A crisp, color display and attractive, upscale appearance that appeals to many retailers.
- Modular design that incorporates upgrade modules.
- A long-lasting, scratch-resistant capacitive touch screen that allows consumers to make selections with their fingertip or electronic stylus.
- Large display that handles signature capture, scrolling line item detail, regulatory disclosures, credit applications, and more.
- Smallest footprint of any VGA product on the market.

## Features and Benefits

The following are the features and benefits for M<sup>x</sup>800 Series terminal:

**Table 3 Features and Benefits**

Features	Benefit
Optional upgradable modules	Lets retailers economically address today's needs, while adding capabilities as desired; protects investment.
Safety glass touch panel	Capacitive and electrostatic technologies highly effective; better response with fingertip and active stylus; scratch-resistant.
Signature capture capability	Speeds up customers through lanes; allows digital storage and retrieval-lowering costs.
Triple-track magnetic card reader	Logically oriented for improved read rates; handles all mag-stripe cards, including driver's licenses.
Smart card reader/writer	Accepts chip cards conforming to the latest global standards (EMV 4.0)
Visa PED-compliant PINpad	Virtual PINpad complies with Visa regulations for improved security.
1/4 VGA display	High resolution (320 x 240 pixels), 1/4 VGA color display; attractive, modern, upscale, and highly readable.



**Table 3 Features and Benefits (Continued)**

Features	Benefit
Privacy screen	PED-compliant privacy screen, protecting the consumer's PIN entry.
Sophisticated security protections	Includes 3DES encryption, Master Key/Session Key and Derived Unique Key Per Transaction (DUKPT) key management; also incorporates VeriShield file authentication and tampering safeguards to minimize fraud.
32-bit microprocessor	Streamlines processing, even on complex transactions; keeps lanes moving.
16 MB of memory (16 MB of flash)	Ample memory to support multiple payment and value-added applications simultaneously.
Ethernet/USB connectivity	Allows LAN connections for high-speed data transfer and back-end clearing, and settlement; supports connections to ECRs and PCs using USB or Ethernet.
RS-232/RS-485 ports	Provides connectivity for ECRs in tailgate mode using RS-485, and for peripherals such as printers and bar code scanners using RS-232.
Audio	Includes output jacks for external speakers.

## **Factory Options**

Factory options are available for the M<sup>x</sup>800 Series terminal depending on your terminal needs.

### **Smart Card Module**

The smart card module fully conforms to global EMV standards, allowing consumers to use smart cards to complete the transactions under guidelines originally formulated by Europay, MasterCard, and Visa (EMV). Smart cards are increasing in popularity in many regions worldwide. They can be used for payment transactions as well as for a wide array of value-added applications such as loyalty, gift card, and pre-pay cards.

### **Ethernet Module**

The Ethernet module allows you to connect Ethernet-based LANs for high-speed data transfer. It has a broad range of applications which include streamlining the back-end clearing, and settlement, or to efficiently capture consumer data at the POS.

### **Polarized Screen**

Polarized screen prevents a non-user from viewing the display screen information from an angle unless the user is directly in front of the display.

### **Speakers**

The M<sup>x</sup>800 Series terminal has built-in speakers for tones, prompts and music line-out port available to drive external powered speakers.

## Optional Modules

---

The M<sup>x</sup>800 Series terminal offers upgradable modules that can be installed in the factory or upgraded after distribution to the field. All modules can be installed easily and efficiently. Complete installation instructions are found in the [Installing Optional Modules](#) section.

### Contactless Reader Module

The optional contactless smart card module incorporates RFID technology based on the ISO 14443 worldwide standard. The “tap-and-go” design conforms to AMEX and MasterCard specifications. Smart cards are read when it is placed in close proximity – 1 to 3.9 in. (2.5 to 10 cm) – to the reader, reducing wear and tear on card readers and cards. Contactless readers can be used to support any number of payment and value-added applications. See [Installing Optional Modules](#) for more information.

### Privacy Screen

The M<sup>x</sup>800 Series series terminals includes an optional, PED-compliant privacy screen to protect the customer's PIN entry. See I/O Module for installation procedures.

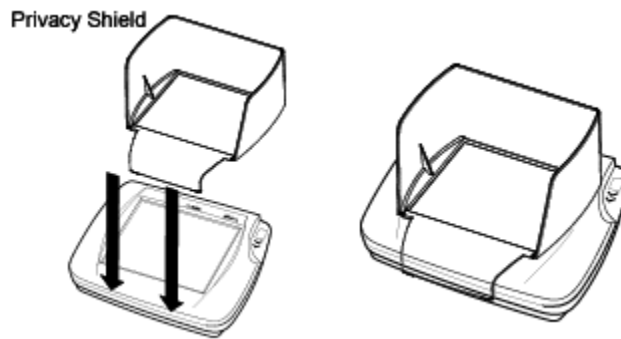
---

#### NOTE



Install VeriFone's M<sup>x</sup>800 Series terminal privacy shield to ensure compliance with ISO 9564 standards and Visa PED requirements.

---



**Figure 1 Mx870 Terminal with Privacy Shield**



**NOTE**

"The tester will verify the physical properties of the privacy screen. The privacy screen of an attended device shall provide protection as described in Appendix A, section A.1 of this document. Alternatively, the vendor may use less restrictive privacy shield criteria provided that the vendor supplies rules and guidance as to how the visual observation is to be deterred by the environment in which the PED is installed. These rules shall be binding for the organization placing the PED into the environment, e.g., the acquirer or merchant. If the vendor gives rules for an external physical privacy shield, then the vendor shall provide a demo/sample with the appropriate dimensions. The tester shall examine the information to verify the assertions of the vendor. The tester shall consider the examples included in Appendix A, section A.2, of this document when evaluating the vendor's visual observation deterrence rules. The user (acquirer or merchant) instructions provided by the vendor shall clearly state the acquirer or merchant must meet the implementation criteria or else deploy PEDs meeting the criteria defined in Appendix A, section A1."

## Applications

Standard payment applications are available from VeriFone to interface with most ECR's. Applications for the two families of terminals are written using a C based programming language. These programs can be downloaded directly from an ECR, another terminal, or a development PC using the Mx800 Series terminal system modes.

Terminal system mode can also be used for diagnostics, changing the password, and Master Key injection. For further information on system mode, see [Chapter 4](#).

## Total Cost of Ownership

Mx800 Series terminal have been designed to be flexible and "future proof", delivering an exceptional total cost of ownership.

The modular terminals can be configured at the factory or in the field by a trained technician. The terminals can be purchased with necessary modules equipped to meet today's requirements and other capabilities can be added as and when needed.

This can include modules with Ethernet and USB connectivity, signature capture, EMV 4.0 Type Approved smart card support, or contactless smart card support.

The flexibility and versatility of the terminal allow retailers to use terminals with different capabilities in different stores or locations. It also makes it easy and economical to adapt changing needs or technology over time—for example, with modules that support next-generation scanning technologies or biometrics for check cashing—that can be installed in the future.

VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E



## Installation

This chapter describes the terminal installation procedure mainly as:

- Installation instructions.
- Connection examples.

### Installing the Device

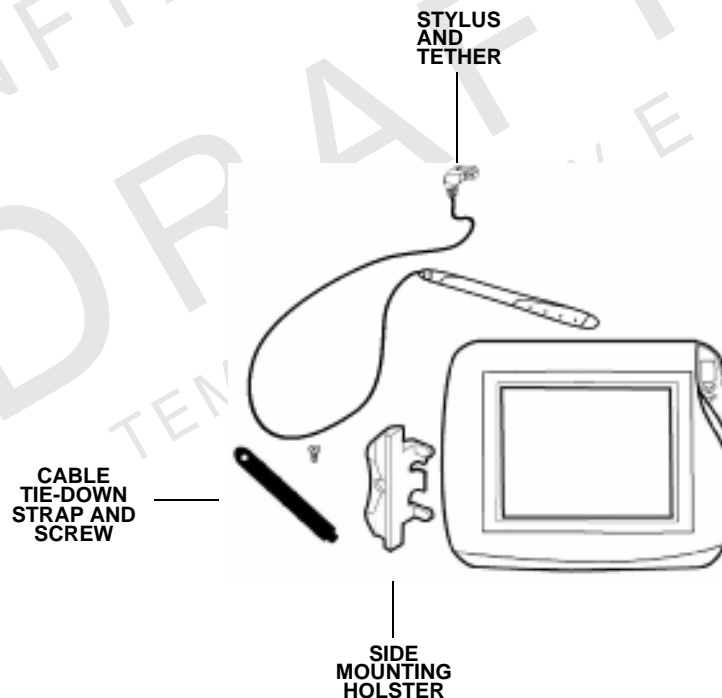
This section presents M<sup>x</sup>800 Series terminal installation guidelines.

#### Unpacking the Shipping Carton

##### NOTE



- Inspect the shipping carton and contents for shipping damage (Figure 2). If the M<sup>x</sup>800 Series series terminal or any other component appears damaged, immediately file a claim with the shipping company and notify your terminal provider.
- Do not use a damaged terminal.



**Figure 2** Example of Terminal Product Components

Follow these steps to unpack the carton:

- 1 With the shipping carton right side up, open the top and remove all items from the carton:
  - Cable tie-down strap and screw
  - Stylus, tether, and mounting holster
- 2 Remove the protective plastic wrap from the display or other components.
- 3 Place the components on a table or countertop.
- 4 Save the shipping carton and packing material for repacking or moving in the future.

### Selecting a Location

- 1 Select a location for the M×800 Series series terminal convenient for the user and merchant that offers adequate ventilation and protection.

---

#### WARNING



The M×800 Series terminal is designed for indoor use only.

---

- 2 Place the M×800 Series terminal on a flat surface, such as a table or countertop or mount on a mounting stand supplied by VeriFone. Avoid areas with:
  - Excessive heat or dust
  - Oil or moisture
  - Devices that cause excessive voltage fluctuations or electrical noise, such as air conditioners, fans, electric motors, neon signs, or high-frequency security devices.
  - Direct sunlight or objects that radiate heat
- 3 Locate the peripheral conveniently in relation to power and ECR or LAN connections. The power pack cable is approximately 1.8 meters (6 feet) long.

---

#### WARNING



Do not use this product near water, including a bathtub, wash bowl, kitchen sink, or laundry tub. Do not use in a wet basement or near a swimming pool.

---

- 4 Before connecting the terminal to the power supply, complete the installation by connecting all the cables (see [Connecting the Device](#) and [Power Up with the Multiport Cable](#)).

### Installing Countertop Wedge

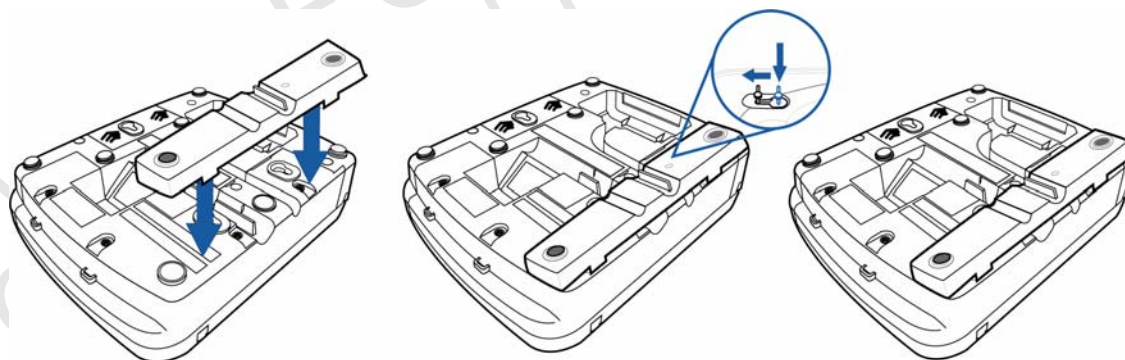
The countertop wedge raises the rear by 10% angle of the M×800 Series series terminal to make easy use of the display (Figure 3).



**Figure 3** Countertop Wedge: Rear View of the M×800 Series terminal

To install the countertop wedge:

- 1 Align the pins in the countertop wedge with the two key holes on the bottom of the M×800 Series series terminal (Figure 4).
- 2 Slide the countertop wedge firmly into position.
- 3 Route the multiport cable through the races in the countertop wedge or through the races underneath the wedge.

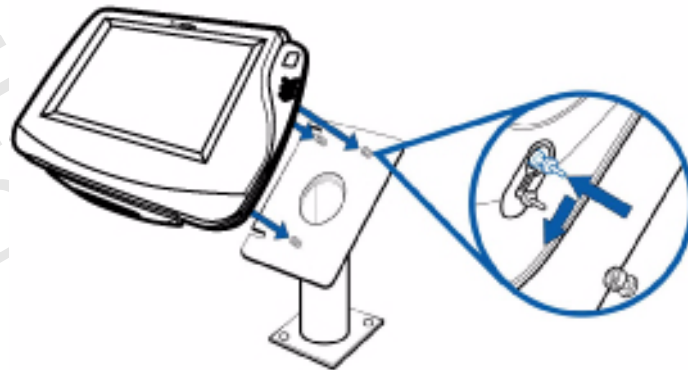


**Figure 4** Installing the Countertop Wedge of M×800 Series Series



**Stand Mount** In most retail spaces, the M<sup>x</sup>800 Series terminal is mounted on a stand mount. To stand mount the M<sup>x</sup>800 Series series terminal:

- 1 Install the stand mount on the countertop in the desired lane over an appropriate hole to thread the wiring connections through.
- 2 Thread all wiring connections through the center of the stand mount.
- 3 Make all wiring connections.
- 4 Attach cable tie-down strap with the supplied screw.
- 5 Align and seat the three pins on the top plate of the stand mount platform with the three key-hole slots on the bottom of the M<sup>x</sup>800 Series terminal ([Figure 5](#)).



**Figure 5** Aligning M<sup>x</sup>800 Series Terminal with the Typical Mounting Plate.

- 6 Slide the M<sup>x</sup>800 Series terminal down until the unit seats securely ([Figure 6](#)).



**Figure 6** M<sup>x</sup>800 Series Terminal mounted.

## Installing Optional Modules

This section presents installation procedures for the M×800 Series terminal's optional modules. The M×800 Series terminal model you have, may already have some of these options. Modules can be installed at the factory or in the field.

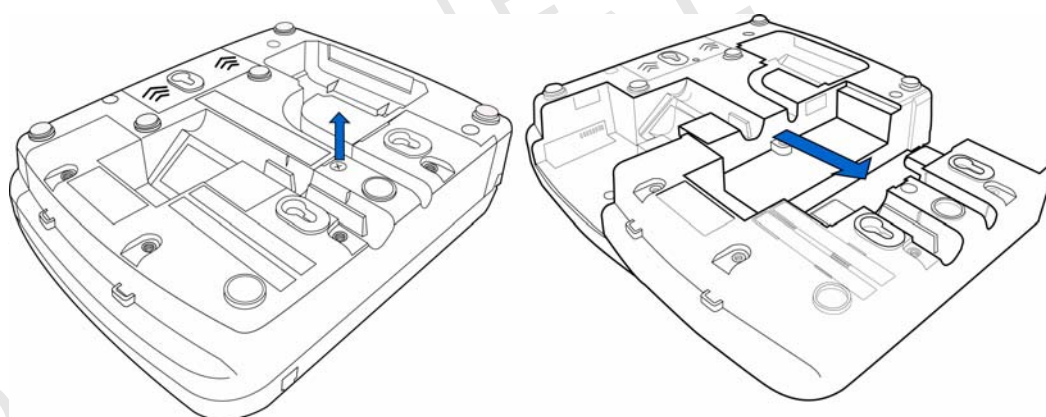


The retaining screws are captive, which means they do not actually separate from their seats, but only from the mounting hole.

### Installing Smart Card Modules

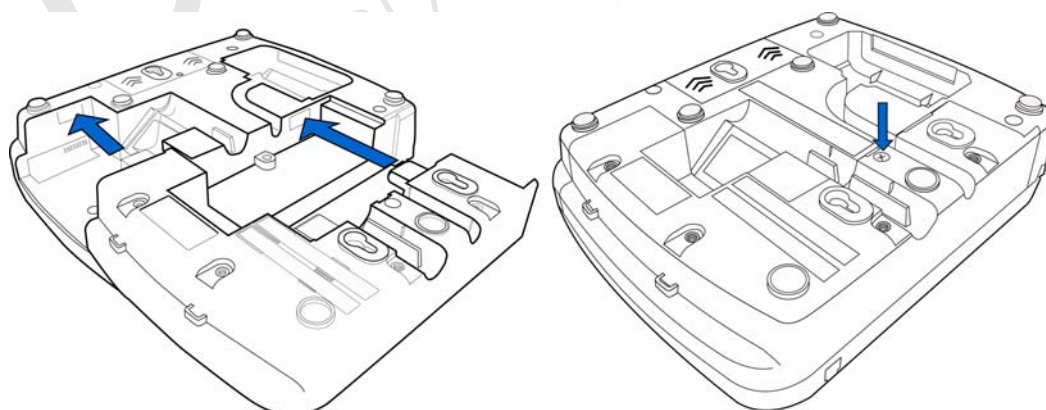
The following are the steps required to install optional I/O modules:

- 1 Loosen the module retaining screw on the bottom of the M×800 Series (Figure 7) until the old module can slide out.



**Figure 7** Removing the Old I/O Module

- 2 Slide the smart card module into place (Figure 8) and secure the retaining screw.



**Figure 8** Installing the Smart Card Module

## Installing SAM Cards – Additional Steps

The following are the additional steps required to install SAM cards once the first two steps of installation is completed.

Often merchants are issued SAM cards to run small applications, such as loyalty programs. SAM cards are only used with Mx800 Series terminal Smart Card configurations.

- 1 Remove the power cord and/or battery from the terminal.
- 2 Place the terminal upside down on a soft, clean surface to protect the lens from scratches.
- 3 Remove the SAM compartment door screw and rotate the door up and back to access the SAM cardholders.
- 4 Remove any previously installed SAM card by sliding the card from the MSAM cardholder.
- 5 Install an MSAM card by aligning the card and carefully sliding it within the guides on the cover until it is fully inserted.

### NOTE



Before inserting the SAM card, position it with the card's gold contacts facing the smart card reader end of the terminal. The cardholder connector base has a set of contacts and a notch on one corner to ensure the SAM card is positioned correctly. The SAM card has a notch on one corner to ensure that it fits into the connector base in only one way. The SAM compartment door will not close properly if the SAM cards are installed incorrectly.

## Installing Trim Plate

The Mx800 Series terminal can be fitted with interchangeable trim plates to customize the appearance of the terminal.

- 1 Insert the trim plate by lining up the three notches of the face plate into the unit.
- 2 Firmly snap the top part of the trim plate to secure the new trim plate.



**Figure 9** Installing the trim plate.

## Connecting the Device

Brief descriptions of possible M<sup>x</sup>800 Series terminal device connections and the power pack connection are provided in this section. For complete information about installing and using an optional device, refer to the user documentation supplied with that device. For a list of compatible cables for these connections, see [Accessories](#).



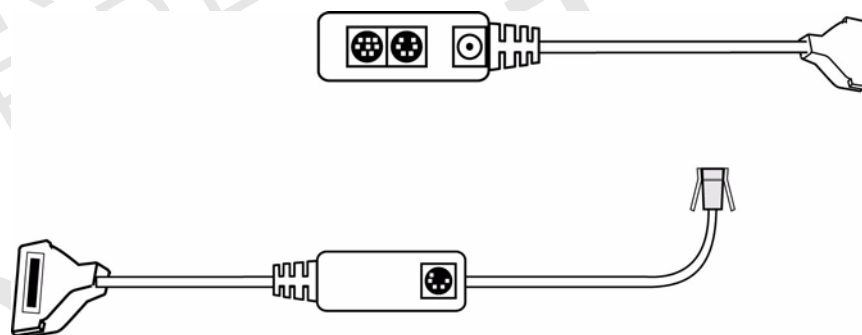
Before connecting the M<sup>x</sup>800 Series terminal, ensure all units are not connected to a power source. Unplug all power packs from the wall jack.

### Multiport Cable

The M<sup>x</sup>800 Series terminal uses a *multiport* cable ([Figure 10](#)) to make most connections, including connections to

- an ECR,
- an RS-485 LAN, or
- a development/host PC.

Ethernet LAN and USB connections are made using the [Installing Optional Modules](#) option.



**Figure 10** Multiport Cable: Front and Rear

### Disconnecting Multiport

The following are the precautions taken at the time of disconnecting the Multiport:

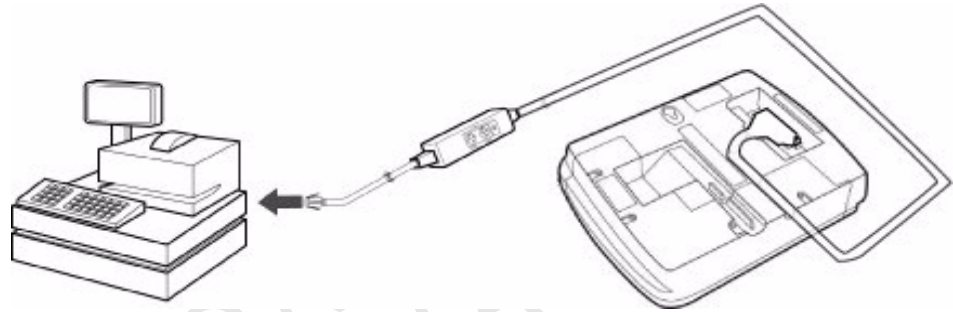
- Improper installation or removal of the terminal connector may permanently damage the M<sup>x</sup>800 Series.
- Do not force the terminal connector into place.
- Always make sure all of the pins are lined up in correct parallel fashion before applying light pressure to snap the terminal connector into place.
- Do not attempt to remove the terminal connector by pulling directly on the cable. Instead, firmly grasp the sides of the terminal connector with thumb and forefinger, then pull straight away at the same angle the connector on the terminal is facing.
- Disconnecting the power source during transaction processing may cause loss of transaction data.

## Connecting ECR in Tailgate Mode

To connect an ECR to the M<sup>x</sup>800 Series terminal (see [Figure 11](#)):

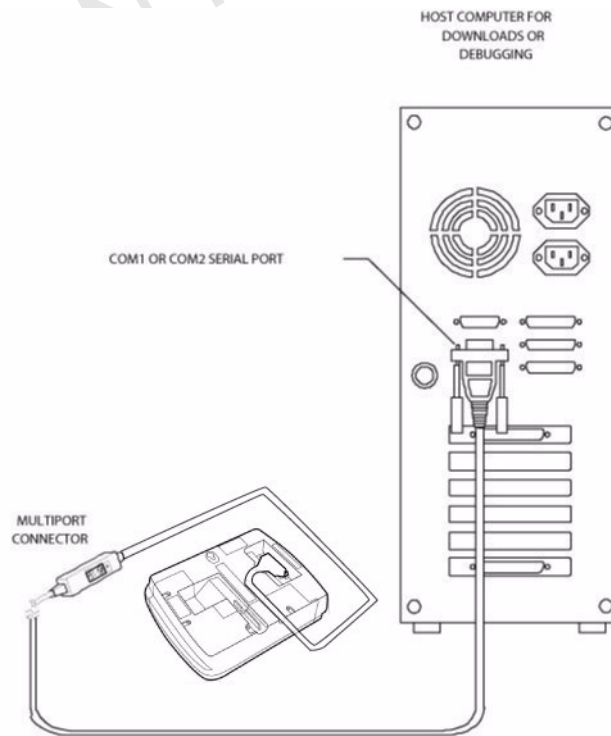
- 1 Insert the multiport cable into the rear of the ECR.
- 2 Insert the multiport cable plug into the bottom socket on the M<sup>x</sup>800 Series terminal, as shown in [Figure 11](#).

**Figure 11** Example ECR Connection



## Connecting to a Host PC

To connect the M<sup>x</sup>800 Series terminal to a development PC. See [Figure 12](#)



**Figure 12** Host PC Connection

### Connecting to the Ethernet LAN

To connect the M<sup>x</sup>800 Series terminal to an Ethernet LAN through the 10BaseT port, using a standard Ethernet cable, insert the LAN cable from the LAN router or hub into the 10Base-T port on the bottom of the M<sup>x</sup>800 Series terminal.

### Connecting to USB Host or Hub

Connecting to a USB host or hub requires a VeriFone USB cable (VPN 22982-xx). To connect to a USB host or hub:

- 1 Insert the modular plug on the USB cable into the USB jack.
- 2 Route the cable through the slots to the desired exit side.
- 3 Plug the other end of the USB cable into the USB host or hub.

#### NOTE



The M<sup>x</sup>800 Series series terminal can be connected to an ECR through the USB cable. When connected through a USB cable, the M<sup>x</sup>800 Series series terminal gets power through the USB cable and does not require the multiport cable.

### Power Up with the Multiport Cable

This section describes how to connect the M<sup>x</sup>800 Series terminal to a power source with the multiport cable.

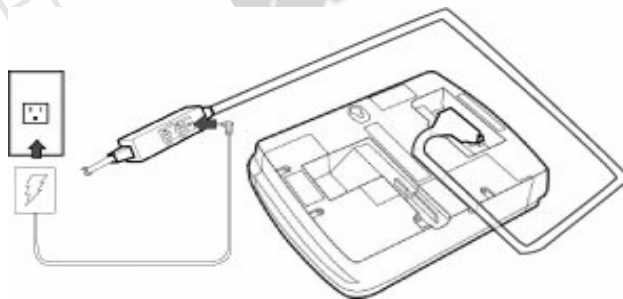
If connected to an ECR, the M<sup>x</sup>800 Series terminal gets power from the ECR.

#### WARNING



Do not plug the power pack into an outdoor outlet or operate the terminal outdoors.

- 1 Make all other connections before connecting the power pack.
- 2 Insert the multiport cable connector into the port on the back of the M<sup>x</sup>800 Series terminal (see [Figure 13](#)).
- 3 Route the cable through the slots to the desired exit side.
- 4 Plug the power pack into an indoor electrical power outlet ([Figure 13](#)).



**Figure 13 Power Pack Connection**

If no application is installed in the terminal, the message `DOWNLOAD NEEDED` displays for a moment, then the main M<sup>x</sup>800 Series terminal screen displays. An application-specific prompt displays when an application executes.

## Power Up without the Multiport Cable

This section describes connecting the M\*800 Series terminal to a power source when no multiport cable is required.

---

**NOTE**

If connected to an ECR using a USB cable, the M\*800 Series terminal gets power from the ECR.

---

Use the following guidelines when M\*800 Series terminal is connected to power:

- 1 Make all the cable connections before connecting the power cable.
- 2 Insert the modular power connector either into the USB or 10Base-T port, whichever is available.
- 3 Plug the power pack into an indoor electrical wall outlet.



## Maintenance

The M<sup>x</sup>800 Series terminal has no user-maintainable parts.

### Cleaning the Terminal

To clean the terminal, 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. For best results, use a VeriFone Cleaning Kit. For further details refer to 02746-01 *VeriFone Cleaning Kit*.

#### **WARNING**



Never use thinner, trichloroethylene, or ketone-based solvents – they may deteriorate plastic or rubber parts. Do not spray cleaners or other solutions directly onto the display.

### Smart Card Reader

Do not attempt to clean the smart card reader. Doing so may void any warranty. For smart card reader service, contact your VeriFone distributor or service provider.

#### **NOTE**



The smart card implementation is a proprietary hardware solution that has no serviceable parts.

VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E





### Troubleshooting

During normal, day-to-day operation of your M<sup>x</sup>800 Series series terminal, it is possible that minor malfunctions can occur. Following are some examples of possible problems, and steps to resolve them.

VeriFone follows stringent quality control standards in the manufacture of M<sup>x</sup>800 Series terminals. Each unit that leaves the factory receives numerous tests to ensure quality and reliable operation. However, should you encounter a problem in operation, read this section for possible causes and solutions.

---

**NOTE**

- Perform only those adjustments or repairs specified in this guide. For all other services, contact your local VeriFone distributor or service provider. Service conducted by parties other than authorized VeriFone representatives may void the product warranty.
  - The M<sup>x</sup>800 Series terminal comes equipped with tamper-evident labels. Do not, under any circumstance, attempt to disassemble the terminal.
- 

The troubleshooting guidelines provided in this section identify various problems and suggest appropriate corrective action(s). If you have problems operating your M<sup>x</sup>800 Series terminal, please read through these troubleshooting examples. If the problem persists or if it is not described below, contact your local VeriFone representative for assistance.

**Blank Display** The following are the corrective steps taken if the terminal display does not show correct or readable information:

- 1 Check all cable connections.
- 2 If the problem persists, contact your local VeriFone representative for assistance.

**Serial Port Does Not Work** The following are the corrective steps taken if the serial port does not work:

- 1 Check that the device connected to the serial port of the multiport cable of the M<sup>x</sup>800 Series terminal has power and is functioning correctly. If possible, perform a self-test on the device.
- 2 The cable connecting the optional device to the M<sup>x</sup>800 Series terminal serial port may be defective. Try a different serial cable.
- 3 If the problem persists, contact your local VeriFone representative for assistance.

**Transaction Fail to Process**

The following are the corrective steps taken if the terminal does not process the transaction:

There are several possible reasons why the terminal may not be operating correctly or processing transactions. To check the most likely causes, follow the steps below.

**Step 1: Check the magnetic card reader**

- 1 Make sure you are swiping cards correctly with the M<sup>x</sup>800 Series terminal. The M<sup>x</sup>800 Series terminal reader, the black magnetic stripe on the card should face down.
- 2 Perform a test transaction using several different magnetic stripe cards to ensure the problem is not a defective card.
- 3 Process a transaction manually using the touch screen instead of the card reader. If the manual transaction works, the problem may be a defective card reader. Contact your VeriFone distributor or service provider.
- 4 If the manual transaction does not work, proceed to Step 3.

**Step 2: Check the smart card reader**

- 1 Make sure you are inserting the cards correctly with the M<sup>x</sup>800 Series terminal smart card reader. The chip on the card should face down and inward.
- 2 Perform a test transaction using several different smart cards to ensure that the problem is not with the card.
- 3 Ensure any MSAM cards are correctly inserted and the cardholders are properly secured.
- 4 If the problem persists, contact your VeriFone distributor or service provider.

**Step 3: Check the cable connections**

- 1 Ensure that all cables are correctly connected.  
If cables are connected properly:
- 2 Check that the cable is in working order by connecting a known good cable. If transactions process with this cable, replace the bad cable.
- 3 If the problem persists, contact your local VeriFone representative for assistance.

**No Response From the Stylus**

The following are the corrective steps taken if the terminal does not respond to the stylus inputs:

- 1 Check the documentation to ensure that the terminal supports stylus.
- 2 Unplug the stylus that does not respond and connect a known working stylus.
- 3 If the problem persists, contact your local VeriFone representative for assistance.

**Gap in Captured Signature**

The following are the corrective steps taken if there is a gap in captured signature:

- 1 Ensure that the stylus is pressed hard during signature capture.

- 2 If the problem persists, contact your local VeriFone representative for assistance.

### No Response From the Touch Panel

The following are the corrective steps taken if the Touch Panel does not respond or gives an incorrect response.

- 1 Make sure you power off and power on.

---

#### NOTE



Keep your hands away from the touch panel while terminal powers up.

---

- 2 If the problem persists, contact your local VeriFone representative for assistance.

VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E



VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E



## VeriFone Service and Support

For M×800 Series terminal problems, contact your local VeriFone representative or service provider.

For M×800 Series product service and repair information:

- USA – VeriFone Service and Support Group, 1-800-834-9133, Monday - Friday, 8 A.M. - 7 P.M., EST
- International – Contact your VeriFone representative.

### Return a Terminal for Service

Before returning the M×800 Series terminal to VeriFone, obtain a Merchandise Return Authorization (MRA) number. The following procedure describes how to return one or more M×800 Series Series terminals for repair or replacement (U.S. customers only).

---

#### NOTE



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

---

#### WARNING



Do not, under any circumstances, attempt any service, adjustments, or repairs on this equipment, other than the simple cleaning processes discussed in [Chapter 3](#). Instead, contact your local VeriFone distributor or service provider for assistance. Failure to comply can invalidate the product warranty.

---

#### WARNING



This terminal comes equipped with a tamper-evident label. This Tamper Warning label covers a screw hole on the case bottom and indicates if an unauthorized party has opened the terminal case. Opening the case will make the terminal inoperable and void the product warranty!

- 1 Gather the following information from the printed labels (see [Figure 14](#)) on the bottom of *each* M×800 Series terminal to be returned:
  - Product ID, including the model and part number.
  - Serial number (S/N xxx-xxx-xxx)
- 2 Within the United States, call VeriFone toll-free at 1-800-834-9133.
- 3 Select the MRA option from the automated message. The MRA department is open Monday–Friday, 8 A.M.–7 P.M., EST.



- 4 Give the MRA representative the information gathered in step 1.  
If the list of serial numbers is long, fax the list, along with the information gathered in step 1, to the MRA department at 727-953-4172.
  - Please address the fax clearly to the attention of the “VeriFone MRA Dept.”
  - Include a telephone number where you can be reached, as well as your fax number.
  - You will be issued MRA number(s) and the fax will be returned to you.

---

**NOTE**

One MRA number must be issued for each M<sup>x</sup>800 Series terminal returned to VeriFone, even if you are returning the same model several times.

---

- 5 Describe the problem(s).
- 6 Provide the shipping address where the repaired or replacement unit must be returned.
- 7 Keep a record of the following items:
  - Assigned MRA number(s).
  - VeriFone serial number assigned to the M<sup>x</sup>800 Series terminal you are returning for service or repair (terminal serial numbers are located on the bottom of the unit (see [Figure 14](#)).
  - 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 M\*800 Series terminal).

NEEDS UPDATED IMAGE

**Figure 14 Product Information Labels**

## Accessories

Accessories for the M\*800 Series are listed below. When ordering, please refer to the part number in the left column.

### Optional I/O Modules

TBD

TBD

Ethernet

### Optional Accessories

22647-XX (TBD)

Trim Plate

22648-01 (TBD)

Privacy Shield

22967-01 (TBD)

Countertop wedge

23294-01 (TBD)

Privacy shield

23323-01 (TBD)

Stylus

### Cables

XX in part numbers indicates different cable lengths, as follows:

XX =	Length Metric	Length Feet
00	0.36 m	1.2'
01	1.0 m	3.3'
02	2.0 m	6.6'
03	3.0 m	9.8'
05	5.0 m	16.4'

**M×800 Series Terminal Cables****Table 4 Multiport Cable**

Part Number	Description
TBD	Red
TBD	Green
TBD	Blue
TBD	Black

**Mini-DIN Style Multiport Cables****Table 5**

Part Number	Description
13984-XX	1 6/8-pin mini-DIN serial port and 2 ECR tailgates; flying lead to connect to ECR
17820-XX	2 serial port; 1 ECR port
17881-XX	2 serial ports; flying lead to connect to ECR
17882-XX	1 serial port and 1 5-pin LAN port; flying lead to connect to ECR
17883-XX	2 serial ports; RJ11 flying lead to connect to LAN
17884-XX	3 serial ports; no flying lead
17885-XX	3 serial ports; D89F serial port flying lead to connect to PC

**NOTE**

Use standard Ethernet cables (MOD8-MOD8) to complete the 10Base-T connection.

**Additional Cables**

00124-03	Telco cable; M×800 Series to RJ11 phone jack
05602-00	RJ45-DB9; M×800 Series to PC AT
07042-XX	RJ45-RJ11; M×800 Series to PINPad
22089-XX	RJ45-SDL8; M×800 Series to IBM ECR 46xx (port 5A)
22090-XX	RJ45-SDL4; M×800 Series to IBM 46xx ECR (SDL4 port)
22091-XX	RJ45-8-pin Mini DIN; M×800 Series to printer 250, 900, or 355
22092-XX	RJ45-RJ45; M×800 Series to VeriFone terminal
22093-XX	RJ45-SDL8; M×800 Series to IBM ECR 46xx (port 5B)
22172-XX	RJ45-SDL8; M×800 Series to IBM ECR keyboard (SDL8 port)
22982-XX	M×800 Series USB to PC USB


**Documentation** When ordering, please refer to the part number in the left column.

- 22934 *Omni 7000MPD Quick Installation Guide*
- 22936 *Omni 7000MPD Signature Capture/Touch Screen Module Quick Installation Guide*
- 23255 *Omni 7100MPD Quick Installation Guide*
- 23432 *Omni 7xxx Series Programmers Guide*
- 23433 *Omni 7xxx Series Reference Manual*
- 23434 *Omni 7xxx Series I/O Module Quick Installation Guide*

**Support Packages** When ordering, please refer to the part number in the left column.

- P006-277-xx-MK *M\*800 Series Programmers Support Package Kit*
- P006-278-xx-MK *M\*800 Series Programmers Support Package Kit*

VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E



VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E





## Specifications

### **M<sup>x</sup>800 Series Terminal Specifications**

**Table 6      M<sup>x</sup>800 Series Terminal Specifications**

Power	<ul style="list-style-type: none"><li>• Peripheral power requirements: DC power pack: 12 V DC at 1.0 A</li><li>• Power pack requirements: 120 V AC at 60 Hz (U.S.)</li></ul>
Environmental	<ul style="list-style-type: none"><li>• Operating temperature: 0° to 40° C (32° to 104° F)</li><li>• Storage temperature: – 18° to + 66° C (0° to 150° F)</li><li>• Humidity: 15% to 95% relative humidity; no condensation</li></ul>
Dimensions	Base Unit <ul style="list-style-type: none"><li>• Height: 153 mm (6.0 inches)</li><li>• Width: 192 mm (7.5 inches)</li><li>• Depth: 52 mm (2 inches)</li></ul>
Weight	<ul style="list-style-type: none"><li>• Terminal weight: 0.71 kg (1.56 lb)</li></ul>

Shipping weight: 1.08 kg (2.38 lb); includes terminal, cable tie down strap and screw, and quick installation guide.

VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E







## A

Accessories

Optional **31**

Optional I/O Modules **31**

Applications **10**

## C

connecting

ECR in Tailgate mode **20**

Ethernet LAN

Ethernet LAN **21**

Host PC **20**

hub **21**

multiport cable

multiport cable **19**

USB host **21**

## D

disconnecting

multiport cable

multiport cable **19**

display

troubleshooting **25**

## E

ECR

Tailgate mode **20**

Ethernet **9**

## F

Factory Options **9**

factory options

ethernet/USB module **9**

polarized screen **9**

smart card module **9**

speakers **9**

Features **7**

Mx800 Series **7**

Spectrum Mx800 Series **8**

## I

installation

unpacking **13**

installing

countertop wedge **15**

optional modules **17**

SAM cards **18**

selecting a location **14**

smart card modules **17**

stand mount **16**

trim plate **18**

## M

maintenance **23**

cleaning the terminal **23**

returning a terminal for repair or replacement **29**

smart card reader **23**

multiport cable

power up **22**

Mx800 Series

features and benefits **8**

maintenance **23**

overview **7**

## O

Optional Accessories

Cables **31**

Optional Modules **9**

Contactless Reader Module **10**

optional modules **10**

privacy shield **10**

signature capture **10**

smart card **17**

## S

SAM cards

additional steps **18**

service

returning a terminal for repair or replacement **29**

Service and Support **29**

Specifications

Omni 7000 MPD **35**  
Support Packages **33**

## **T**

terminal

repair **29**

replacement **29**

service and support **29**

troubleshooting **25**

Total Cost of Ownership **10**

troubleshooting **25**

display **25**

serial port connection **25**

terminal transactions **26**

VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E



VERIFONE  
CONFIDENTIAL  
DRAFT  
TEMPLATE REV E





VeriFone, Inc.  
2099 Gateway Place, Suite 600  
San Jose, CA, 95110 USA.  
1-800-VeriFone  
[www.verifone.com](http://www.verifone.com)

# Mx800 Series

## *Installation Guide*

