M450
Installation Guide

Verifone Part Number: DOC390-001-EN-A, Revision A01.1

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M450 Installation Guide
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Verifone Part Number: DOC390-001-EN-A, Revision A01.1

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Preface

This guide is the primary source of information for setting up the M450 device.

Audience

This guide is intended for the users involved in the M450 device installation.

Organization

This guide is organized as follows:

- Chapter 1, Device Overview. Provides an overview of the M450 device.
- Chapter 2, Device Setup. Explains setup and installation of the device, selecting location, and establishing connections with other devices.
- Chapter 3, Specifications. Discusses power requirements and dimensions of the device.
- Chapter 4, Maintenance and Cleaning. Explains how to maintain the device.
- Chapter 5, Service and Support. Provides information on how to contact your local Verifone representative or service provider and information on how to order accessories or documentation from Verifone.
- Chapter 6, Accessories. Provides the range of accessories with corresponding part numbers.
- Chapter 7, Troubleshooting Guidelines. Provides troubleshooting guidelines.

Related Documentation

To learn more about the M450, refer to the following documents associated with the Verifone Part Numbers (VPNs).

M450 Certifications and Regulations	VPN DOC391-004-EN
M450 Quick Installation Guide	VPN DOC390-002-EN

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Conventions

The following table describes the conventions and provides examples of their use.

Convention	Meaning	Example
Blue	Text in blue indicates terms that are cross-referenced.	See Conventions.
	The bulb icon is used to highlight important information.	If exchanging cables use a Verifone-approved cable.
	The caution symbol indicates possible hardware or software failure or loss of data.	Avoid placing metallic objects at the front of the card reader.
	The lightning symbol is used as a warning when bodily injury might occur.	For safety, do not string cables or cords across a walkway.

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1. Device Overview

The Verifone M450 is a versatile multi-lane, media-capable, consumer-facing device designed for standalone or integrated retail payment solutions, such as kiosks. It includes security features like a privacy shield to prevent PIN spying during entry. The M450 supports a range of services, including advanced payment methods, e-commerce capabilities like Buy Online Pick-Up in Store, and multimedia-driven promotional content at checkout. It features barcode and QR code scanning via an integrated camera, supports Android apps for loyalty and inventory, and offers remote device management through a Verifone estate management solution.

Additional highlights include SAM card support, ECR support through serial over USB and IP over USB, voice communication for issue reporting, and video playback for staff training and customer promotions, making the customer journey seamless with options like USB and Ethernet connectivity.

Features and Benefits

Ease of Use

- 8” LCD (Liquid Crystal 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 Quad-core ARM (Advanced RISC Machine) Cortex-A53 64-bit CPU (Central Processing Unit) @ 1.3 GHz (Gigahertz).
- 16 GB (Gigabyte) of eMMC and 2 GB LPDDR3.
- Rounded corners and drop resistant to less than 75cm on a concrete floor to minimize breakage.
- IP53 rating when the terminal is mounted on stand.

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Security

- Broad spectrum of software-based security features including tamper-sensing circuitry to detect an unauthorized intrusion.
- PCI (Payment Card Industry)-PTS (PIN Transaction Security) 6.X for debit and other PIN-based transactions.
- EMV (Europay, MasterCard and Visa Standard) Level 1 Type.
- Supports reliable security features including TLS (Transport Layer Security), 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 along with PIN-based transactions.

Communication

- Bluetooth: Simple, plug-and-play for locations that need short-range wireless capability. Eddystone and iBeacon profiles are also supported.
- Wi-Fi (Wireless Fidelity): Supports multiple wireless devices and supports an existing IP infrastructure.

Connectivity

- USB-C Port

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2. Device Setup

This chapter describes the device setup procedure for the M450 in the following sections:

- Device Location
- PIN Protection Measures
- Inside the Shipping Carton
- Device Features
- Connection Ports
- SAM Card
- Micro SD (TF) Card
- Powering the Device
- Smart Card Reader
- Magnetic Card Reader
- Contactless Smart Card Transaction
- M450 Wi-Fi/BT Support
- Optional Accessories

Device Location

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

- Select a location convenient for both the merchant and cardholder.
- 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.

Environmental Factors

- Do not use the device where there is excess heat, dust, humidity, moisture, caustic chemicals, or oils.
- 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).

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- Avoid using the device near water or in moist conditions.
- Disconnect the device from its POS device before cleaning.

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

N'utilisez pas l'appareil près de l'eau, y compris une baignoire, un lavabo, un évier de cuisine ou une cuve à lessive, dans un sous-sol humide ou près d'une piscine pour éviter les chocs ou les dommages.

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 in such a way as to block visual observation of the PIN entry process so that it is angled in such a way that PIN spying is difficult.
- Install the PED (PIN Entry Device) on an adjustable stand that allows consumers to swivel the device sideways and/or tilt it forward/backward 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.
- Verifone also recommends instructing the cardholder regarding safe PIN entry or using the Privacy Shield for secure PIN entry by installing a Privacy Shield (optional).

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 unsecure 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:

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- Device
- Screw
- Additional accessories

NOTE

Power supply and connectivity cables are part of additional accessories that can be ordered separately.

Refer to section for part numbers and for ordering the required accessories.

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 the section Periodic Inspection.

7 Save the shipping carton and packing material for future repacking or moving of the device.

WARNING

Do not use a unit that has been tampered with or otherwise damaged. This unit comes equipped with tamper-evident labels. If a label or component appears damaged, immediately notify the shipping company and your Verifone representative or service provider.

N'utilisez pas un appareil qui a été altéré ou autrement endommagé. Cet appareil est équipé d'étiquettes inviolables. Si une étiquette ou un composant semble endommagé, informez-en immédiatement la compagnie maritime et votre représentant ou fournisseur de services Verifone.

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 a potential forensics' investigation, and notify your company security officer and your local Verifone

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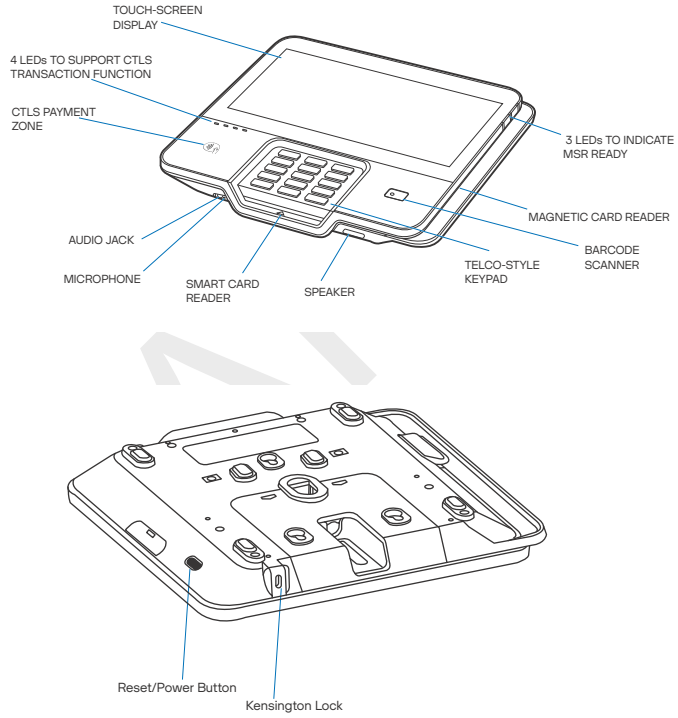
representative or service provider. To contact Verifone, see Service and Support.
For terminals equipped with a privacy shield, perform daily inspections to ensure that the privacy shield is installed and has not been removed.

Device Features

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

Figure:1 M450 Features



Front Panel

The front panel shows the following features:

- Touch Screen Display - The Verifone M450 device has a colored touch screen display.
- Smart Card Reader - A smart card reader is 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.
- Magnetic Card Reader - A magnetic card reader is built into the device for performing debit or credit card transactions. The card can be swiped in 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 9.

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- CTLS Reader - Contactless (CTLS) Reader has dedicated LEDs lower to the left of the display for contactless payments. For directions on how to conduct contactless transactions, see Performing a Contactless Smart Card Transaction.
  - 4 white LEDs to support CTLS transaction function.
  - 3 white LEDs to support MSR (Magnetic Swipe Reader) transaction function.
  - 1 white LED to support SCR (Smart Card Reader) transaction function.
- Audio Jack - A 3.5 mm audio jack to facilitate accessibility for the visually impaired.
- Microphone - The microphone feature comes disabled and is application specific.
- Barcode Scanner - A barcode scanner to capture and read information contained in a barcode.
- K-Lock Slot - Customer can buy any kind of K-lock in the market to use on M450 device for physical security.
- Telco Style Keypad - Intuitive telco-style keypad with colored control keys, interchangeably detects key presses from tactile keypad and touchscreen.

NOTE

On screen PIN entry is NOT supported.

Connection Ports

The device has one custom multiport interface for power and communication.

Connecting Cables and Other Devices

The M450 device works with the new Orange Series for Connectivity.

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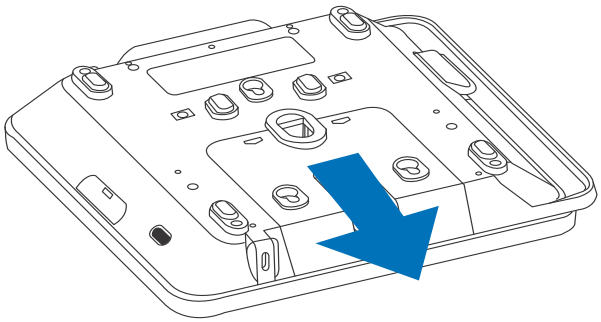
To Connect an M450 Device:

1 Remove the back cover as shown in Figure 2.

Figure:2 Removing Back Cover

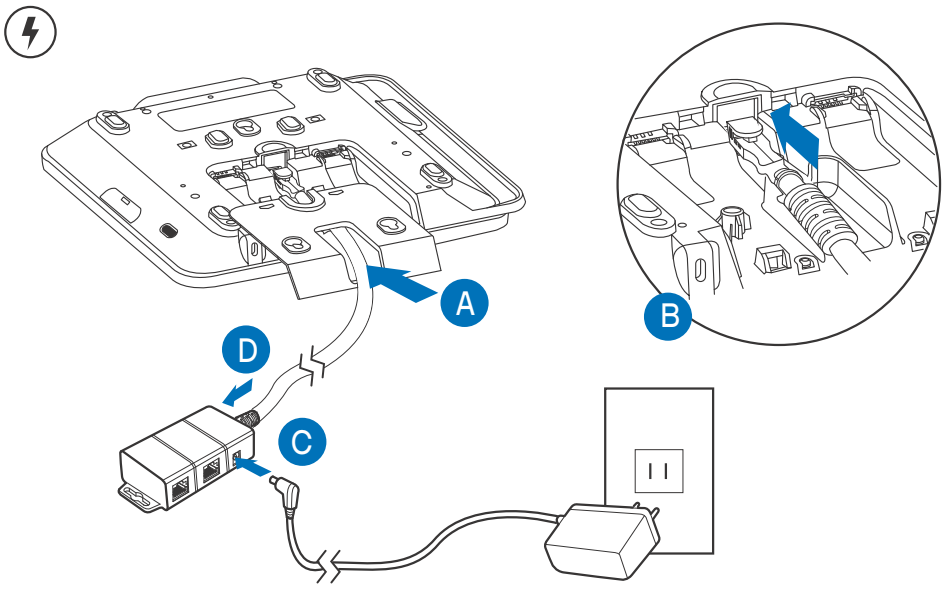


NOTE

Route the Orange M cable through the back cover first, as shown in Figure 3 (A).

2 Connect the Orange M cable at the back of the device, Figure 3 (B). Screw in the other end of the Orange M cable to the Orange dongle, Figure 3 (D).

Figure:3 Orange M Cable Connected on the Rear of the Unit



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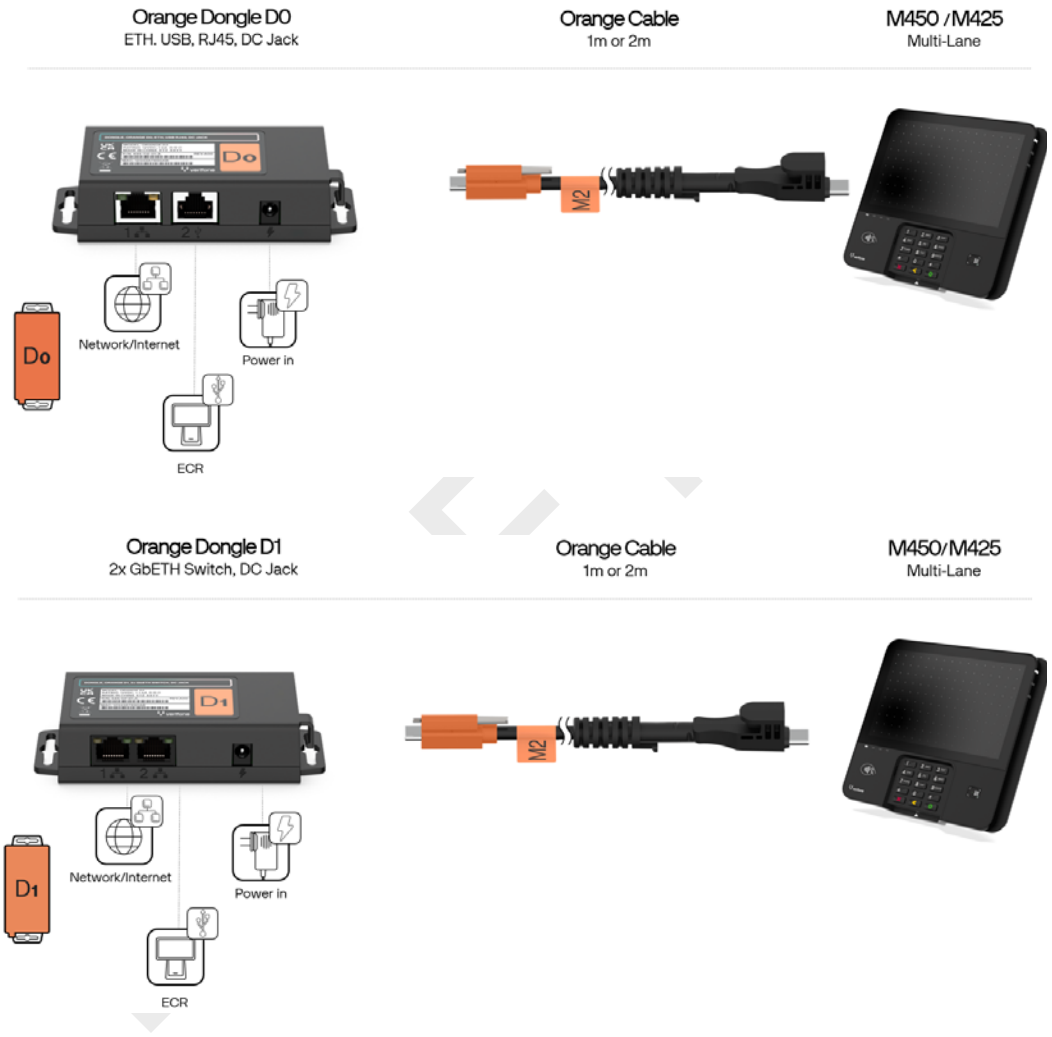
The following show the different Orange Series Dongle options with M Cables for connectivity.



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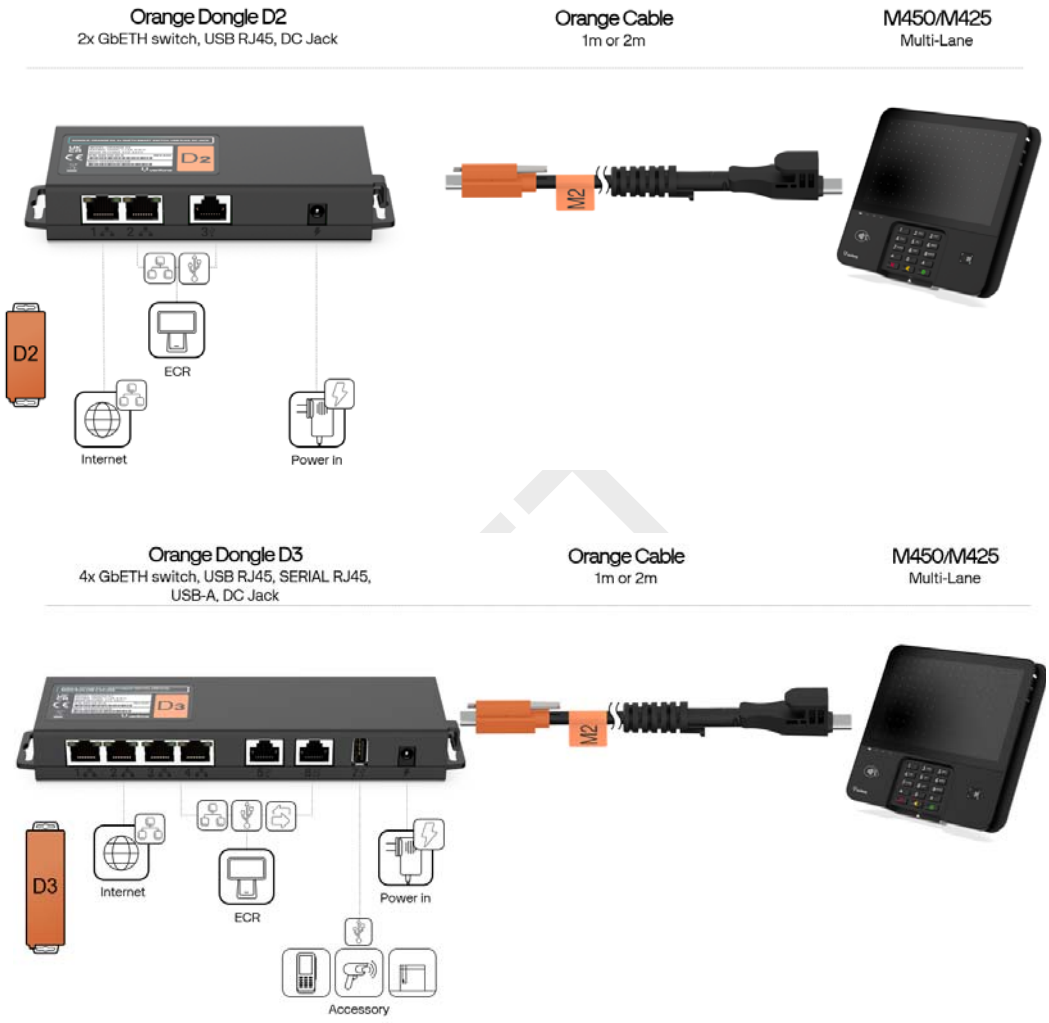
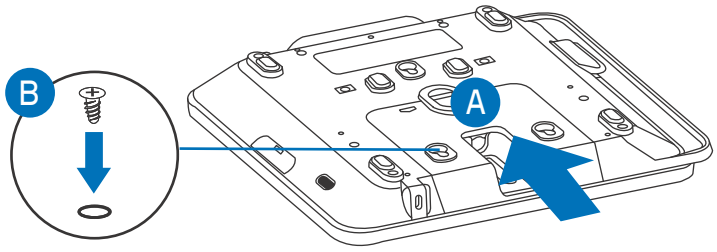


3 Close the cable compartment (Figure 4 (A)), insert and tighten the screw as shown below (Figure 4 (B)).

Figure:4 Closing Cable Compartment with Back Cover



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The M450 device also works with the following Dongles and Cables.

Dongle	Description
Dongle Assembly MSC445-006-00-A	DONGLE ASSY, 1M, MULTILANE, USB RJ45, DC JACK
Dongle Assembly MSC445-011-00-A	DONGLE ASSY, 1M, MULTILANE, ETH, USB RJ45, DC JACK
Dongle Assembly MSC445-012-01-A	DONGLE ASSY, 1M, MULTILANE, SERIAL, DC JACK
Dongle Assembly MSC445-018-00-A	DONGLE ASSY, 1M, MULTILANE, 2xETH SWITCH, DC JACK
Dongle Assembly MSC445-019-01-A	DONGLE ASSY, 1M, MULTILANE, PoE, USB RJ45
Dongle Assembly MSC445-021-01-A	DONGLE ASSY, 1M, PoE, ETH
Dongle Assembly MSC445-028-00-A	DONGLE ASSY, 1M, MULTILANE, SERIAL, DC JACK
Dongle Assembly MSC445-029-00-A	DONGLE ASSY, 1M, MULTILANE, ETH, SERIAL, DC JACK
Dongle Assembly MSC445-035-02-A	DONGLE ASSY, 2M, MULTILANE, 4xGbETH, DC Jack
Dongle Assembly MSC445-038-02-A	DONGLE ASSY, 2M, MULTILANE, 2xGbETH, USB RJ45, DC JACK

SAM Card

You may need to install one, two, or three Security Access Module (SAM) cards or replace an old one.

CAUTION

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

Observez les précautions standard lors de la manipulation d'appareils sensibles aux décharges électrostatiques. Les décharges électrostatiques peuvent endommager l'équipement. Verifone recommande d'utiliser un bracelet antistatique mis à la terre.

Installing or Replacing SAM Card

To install or replace SAM cards:

1. Power off the device.
2. Place the device face down on a soft and clean surface.
3. Remove the back cover of the unit.
4. Insert the SAM cards. Carefully slide the cards one at a time into the slots until fully inserted. The correct orientation of the SAM card is as shown in Figure 5.

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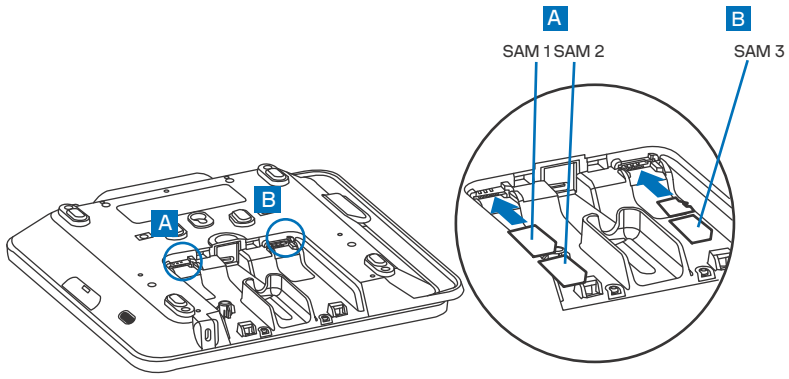
5 Close the back cover.

Figure:5 SAM Insertion



NOTE

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

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

Micro SD (TF) Card

You may need to install one Micro SD (Secure Digital) card.

Installing Micro SD Card

To install a Micro SD card:

1 Power off the device.

2 Place the device face down on a soft and clean surface.

3 Remove the back cover of the unit.

4 Insert the SD card. Carefully slide the card into the slot until fully inserted. The correct orientation of the SD card is as shown in Figure 6.

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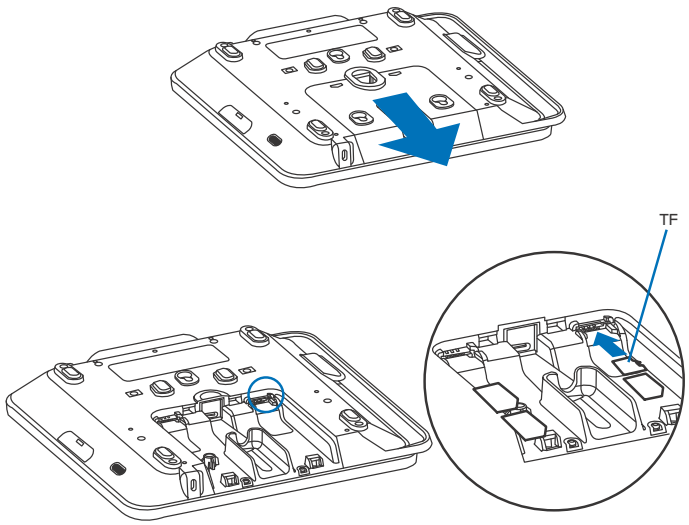
5 Close the back cover.

Figure:6 Micro SD Insertion



Powering the Device

The device can be powered by an external power pack/USB/Ethernet. When you have finished installing the necessary cards and/or optional devices, you are ready to power up the device.

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 the 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 to malfunction. See Specifications for power supply information.

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.

Ne connectez pas l'appareil à l'alimentation électrique tant que tous les périphériques ne sont pas connectés.

L'utilisation d'une alimentation mal calibrée peut endommager l'appareil ou l'empêcher de fonctionner correctement. Voir Spécifications pour les spécifications détaillées de l'alimentation.

Ne branchez pas le bloc d'alimentation sur une prise extérieure et ne faites pas fonctionner l'appareil à l'extérieur. La déconnexion de l'alimentation pendant une transaction peut également entraîner la perte de fichiers de données non enregistrés.

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NOTE

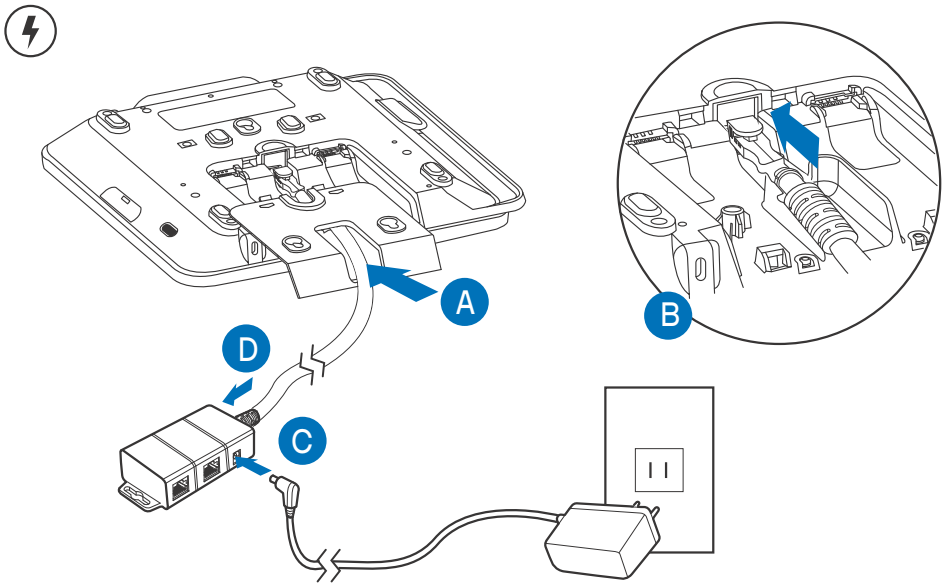
Verifone recommends installing a power surge protector to protect against possible damage caused by lightning strikes and electrical surges.

Connecting M450 to a Power Source

To connect the M450 device to an external power source:

1. Connect the Orange Series M cable to the port at the back of the device, Figure 7 (B). Screw in the other end of the Orange M cable to the Orange Dongle.
2. Close the back cover.

Figure:7 Connecting Base Cable to Device



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

Connecting M450 via Power over USB

A D0, D2, D3 Orange Dongle can be used with a PoUSB custom cable for PoUSB connectivity.

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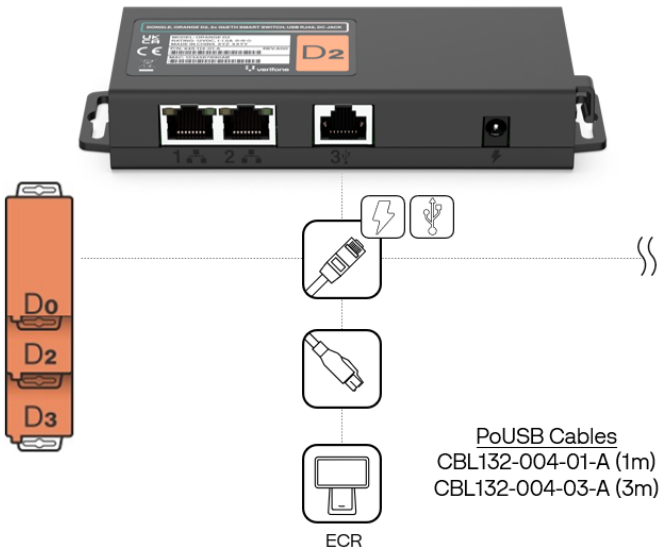
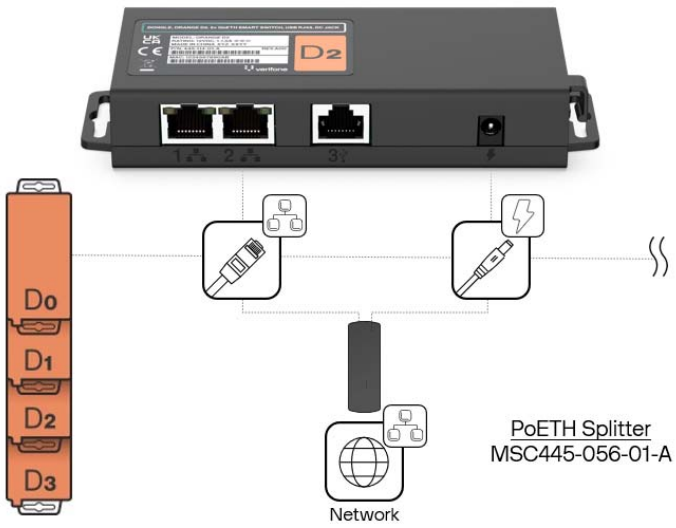
PoUSB – D0, D2, D3



Connecting M450 via Power over Ethernet

Any of the Orange Series Dongles can be used along with the custom PoE Splitter for PoE connectivity.

PoE – D0, D1, D2, D3



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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.

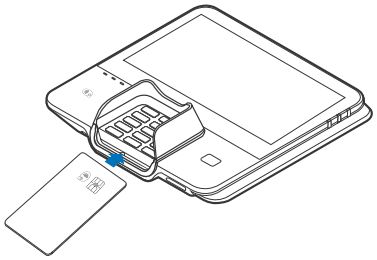
Using the Smart Card Reader

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 sits firmly.

Figure:8 Smart Card Reader



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

CAUTION

Leave the smart card in the card reader until the transaction is completed.

Premature card removal can invalidate a transaction.

Laissez la carte à puce dans le lecteur de carte jusqu'à ce que la transaction soit terminée.

Le retrait prématuré de la carte peut invalider une 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 MSR (Credit/Debit Card Transaction)

To use the MSR (credit/debit card transaction):

1 MSR indicator lights will flash when ready to accept MSR transactions.

2 Position a magnetic card with the stripe to face downward, as shown in Figure 9.

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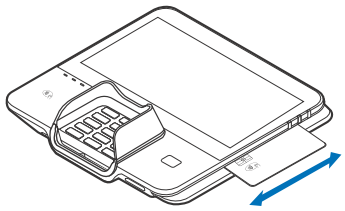
3 Swipe the card through the magnetic card reader.

Figure:9 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.

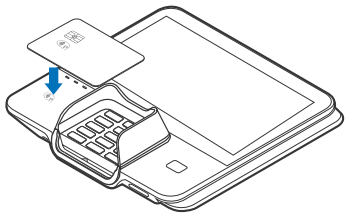
Performing a Contactless Smart Card Transaction

To perform a contactless smart card transaction:

1 Gently tap or hold the card on the surface of the contactless logo.

2 Activated LED icons accompanied by a short beeping sound indicates a successful transaction.

Figure:10 Contactless Smart Card Transaction



CAUTION

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

Ne laissez pas de surfaces métalliques entrer en contact avec le module sans contact pour garantir son bon fonctionnement.

M450 Wi-Fi/ BT Support

The M450 device includes an integrated WLAN (Wireless Local Area Network) RF (Radio Frequency) transceiver for Wireless LAN (Local Area Network) systems with advanced power management, and an integrated radio transceiver for Bluetooth wireless systems.

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Bluetooth Support

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

Wireless Transaction

The M450 device supports wireless transactions. Wireless transactions occur when initialized by an application.

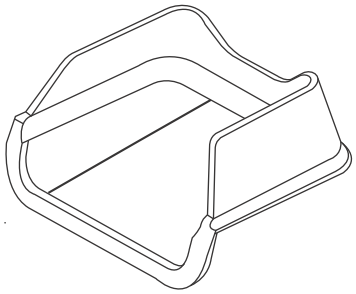
Optional Accessories

These accessories can be used to further enhance the functionality of the device. See the list of part numbers in Accessories 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:11 M450 Privacy Shield

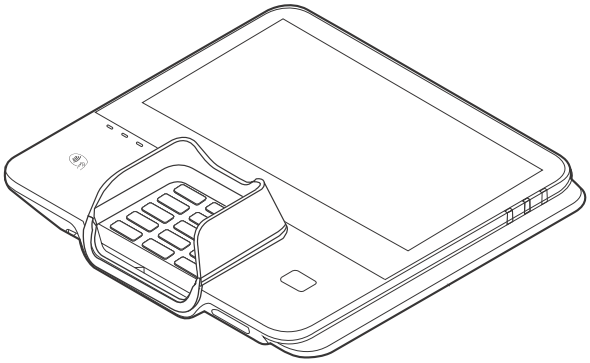


Installing the Privacy Shield

To install the privacy shield:

1. Ensure the area around the keypad is clean. If not, please use an alcohol pad to clean it.
2. Align the privacy shield with the recessed slots on both sides of the keypad. Clip the privacy shield into place on both the sides.

Figure:12 Privacy Shield Attached to Device



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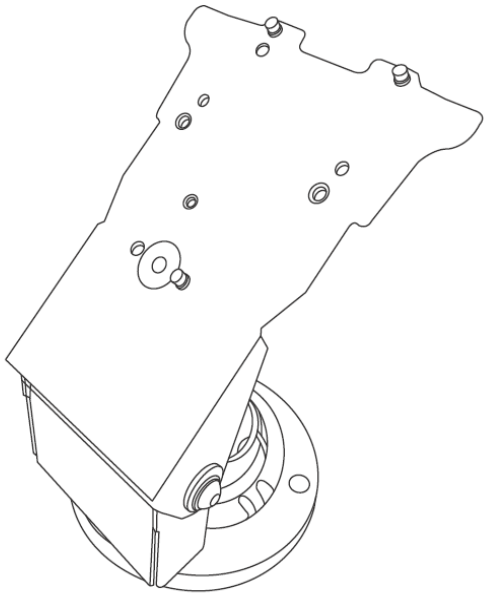
Stand A mounting device that serves as the device's docking station and adds support during customer PIN entry. The stand can be positioned on a countertop and can be adjusted during transactions for privacy.
The opening for the insertion of the IC card must be in full view of the cardholder during card insertion and must not exceed a maximum of 70 degrees downward angle of the ICCR slot from horizontal. Installation height must ensure sufficient view of the card slot entry area to the cardholder.

Figure:13 M450 Stand



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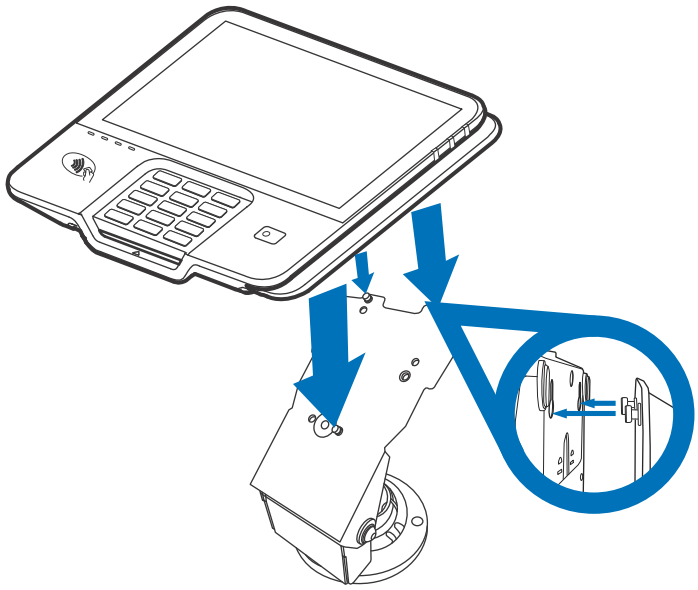
Docking the Device on the Stand

To dock the device on the stand:

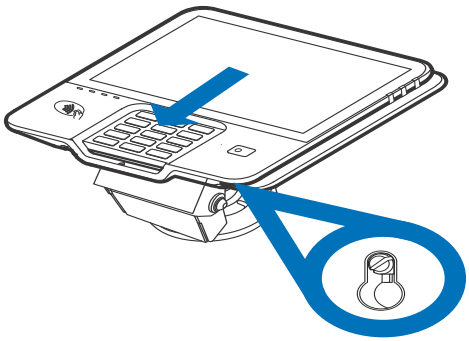
1 Place the device on the base. Ensure that the stand screws align with the keyholes found at the back of the device.

Figure:14 Docking the Device onto the Stand



2 Slide down the device to lock in place.

Figure:15 Locking the Device in Place



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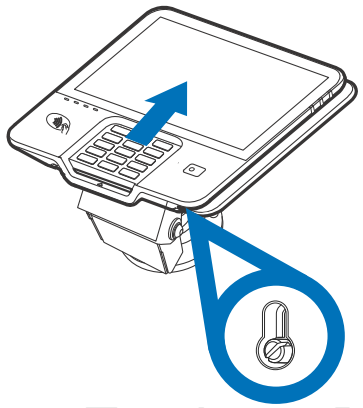
Undocking the Device from the Stand

To undock the device on the stand:

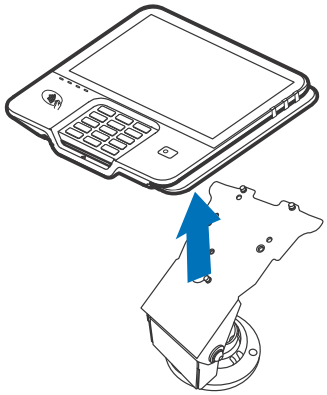
1 Slide the device upward to unhook the device from the stand.

Figure:16 Undocking the Device from the Stand



2 Lift the device off the stand.

Figure:17 Lifting the Device off the Stand



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

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External and Optional Devices

Multiple cable configurations are provided for the M450 device that supports peripheral devices designed for use with electronic point-of-sale systems 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).

Retirez le cordon d'alimentation du câble multiport avant de connecter un périphérique. Rebranchez le cordon d'alimentation uniquement après avoir terminé de connecter le(s) périphérique(s).

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3. Specifications

This chapter discusses power requirements, dimensions, and other specifications of the M450 device.

M450 Specifications

	M450-1	M450-A	M450 Plus-A
Processor	A53 Quadcore 1.3GHz	A53 Quadcore 2.0GHz	A53 Quadcore 2.0GHz
OS Version	AOS 10 VOS3	AOS VOS3	AOS VOS3
Memory	2GB / 16GB	2GB / 32GB	2GB / 32GB
Display	M450 8-inch 1280 x 800	M450 8-inch 1280 x 800	M450 8-inch 1280 x 800
Wi-Fi	2.4GHz b/g/n 5GHz 802.11a/n/ac	2.4GHz b/g/n 5GHz 802.11a/n/ac	2.4GHz b/g/n 5GHz 802.11a/n/ac
Bluetooth	V4.2	V5.0	V5.0
Camera	5MP Auto Focus, Front Bottom Right Corner	2MP Fixed Focus, Front Bottom Right corner	2MP Fixed Focus, Bottom 5MP Fixed Focus, Top Center
CTLS Logo	Printed Bottom Left Corner	Printed Bottom Left Corner	Backlit CTLS Logo Bottom Left Corner
Skimmer Detection	AST	RSD and AST	RSD and AST
Contactless L1	3.1a	3.1a	3.1a
Power	12V 1.5A	12V 1.5A	12V 1.5A
I/O	Orange ETH Dongles Blue USB Cables	Orange ETH Dongles Blue USB Cables	Orange ETH Dongles Blue USB Cables
Environmental	IP53, IK04 Indoor Temp Rated	IP53, IK04 Indoor Temp Rated	IP53, IK04 Indoor Temp Rated
Accessibility	15 key mechanical keypad, Navigator Assistance mode, HSJ	15 key mechanical keypad, Navigator Assistance mode, HSJ	15 key mechanical keypad, Navigator Assistance mode, HSJ, Volume Buttons

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4. Maintenance and Cleaning

General Care

Your device exemplifies superior design and craftsmanship. The following recommendations are provided to help safeguard your warranty coverage:

- Avoid storing the device in hot areas, as elevated temperatures can diminish the lifespan of electronic components, harm batteries, and cause deformation or melting of certain plastics.
- Refrain from storing the device in cold areas, as the return to normal temperatures may lead to moisture formation inside the device, potentially damaging electronic circuit boards.
- Exercise caution to prevent dropping, knocking, or shaking the device, as rough handling can result in the breakage of internal circuit boards and delicate mechanics.

These recommendations are equally applicable to both your device and any accompanying attachments or accessories. If your device is experiencing operational issues, kindly visit the nearest Verifone authorized service provider for maintenance or replacement.

Cleaning & Sanitizing Guidelines

Verifone devices should only be gently cleaned to remove dirt, residue, or debris using a lightly water-damped, clean microfiber cloth. One or two drops of pH-neutral, non-scrubbing soap may be used. Do not use solvents, harsh detergents, or abrasive cleaners.

Using improper cleaning methods or products may result in functional and/or cosmetic issues that are not covered under warranty.

Important Guidelines:

1. **Avoid Direct Application:** Never spray, coat, or pour any liquid, sanitizer, or disinfectant directly onto the device.
2. **Caution Against Harsh Chemicals:** Avoid using bleach, hydrogen peroxide, thinner, trichloroethylene, or ketone-based solvents, as they can degrade plastic and rubber components.
3. **Electrostatic Discharge (ESD) Prevention:** Exercise caution to prevent ESD by refraining from vigorously rubbing with a dry towel or similar actions, as they can cause ESD and trigger a tamper alert.

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Cleaning Instructions

1. Turn off your device.
2. Disconnect it from the power source.
3. Clean it following the instructions and guidelines as mentioned above. Once completely dry, reconnect to power up.
4. It is recommended to clean the magnetic stripe reader (MSR) on a regular basis as any dirt accumulation could lead to MSR reading issues. The MSR track can be cleaned using a commercially available card reader cleaning card or using our own Verifone cleaning card (PN 02746-02)

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5. Accessories

Verifone provides a range of accessories and documentation for the M450. When placing orders, it is essential to reference the specific part numbers. Here are the available channels for ordering: Verifone online store:

- Verifone - Contact us
- USA - Verifone Customer Development Center, 1-800-837-4366
  Monday - Friday, 7 A.M. - 8 P.M., Eastern time
- International - Contact your Verifone representative

Accessories

Part Number	Description
STY379-001-01-A	Passive Stylus
PPL379-013-01-A	Stylus holster
PPL379-014-03-A	Privacy Shield with Low Bridge
PWR390-001-01-A	PS, 100-240VAC, 12VDC/1.5A/18W, US, WM, 1.8M, 9.0/5.5/2.1MM RIGHT ANGLE
MSC445-006-00-A	CABLE ASSY, USB, ICE CUBE
MSC445-010-00-A	CABLE ASSY, ETHERNET, ICE CUBE
MSC445-011-00-A	CABLE ASSY, USB & EHERNET, ICE CUBE
MSC445-012-01-A	CABLE ASSY, ETHERNET, SERIAL, USB & USB
MSC445-018-01-A	CABLE ASSY, M4XX, ETHERNET SWITCH, 2X RJ45
MSC445-019-01-A	CABLE ASSY, M4XX POE, USB CABLE
MSC445-021-01-A	CABLE ASSY, M4XX POE, ETHERNET SWITCH CABLE
MSC445-028-00-A	CABLE ASSY, SERIAL, ICE CUBE
MSC445-029-00-A	CABLE ASSY, ETHERNET & SERIAL, ICE CUBE
MSC445-035-02-A (or *-04-A)	CABLE ASSY, M4XX, GIGA ETHERNET SWITCH, 4X RJ45, 2M (4M) USB CABLE
MSC445-038-02-A	CABLE ASSY, M4XX GB ETH 2X-USB
445-112-01-A + CBL445-031-01-A (or *-02-A)	DONGLE, ORANGE D0, ETH, USB RJ45, DC JACK + CABLE, 1M (2M), ORANGE M1 (M2)
445-117-01-A + CBL445-031-01-A (or *-02-A)	DONGLE, ORANGE D1, 2x GbETH SWITCH, DC JACK + CABLE ORANGE M1 (1 METER) OR M2 (2 METERS)

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Part Number	Description
445-114-01-A + CBL445-031-01-A (or *-02-A)	DONGLE, ORANGE D2, 2x GbETH SWITCH, USB RJ45, DC JACK + CABLE ORANGE M1 (1 METER) OR M2 (2 METERS)
445-115-01-A + CBL445-031-1-A (or *-02-A)	DONGLE, ORANGE D3, 4X GbETH SWITCH, USB RJ45, SERIAL RJ45, USB-A, DC JACK + CABLE ORANGE M1 (1 METER) OR M2 (2 METERS)
MSC445-056-01-A	CABLE ASSY, POE, 1X RJ45

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6. Service and Support

The M450 device does not contain user-serviceable parts. Unless expressly directed, refrain from attempting any service, adjustments, or repairs on the unit under any circumstance.

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

Returning a Device for Service

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

CAUTION

Customers outside the United States are advised to contact their local Verifone representative for assistance regarding service, return, or replacement of devices and accessories.

Il est conseillé aux clients en dehors des États-Unis de contacter leur Verifone local représentant pour obtenir de l'aide concernant l'entretien, le retour ou le remplacement des appareils Et accessoires.

1. Get the following information from the printed labels on the back of each M450 device to be returned:
   - Product ID, including the model and part number. For example, “M450” and “M390-xx-xx” and “PTID xxxxxxxx”
   - Serial number (S/N nnn-nnn-nnn)
2. Obtain the MRA number(s) by completing one of the following:
   - Call Verifone toll-free within the United States at 1-800-Verifone and follow the automated menu options.
   - Select the MRA option from the automated message. The MRA department is open Monday to Friday, 8 A.M. to 8 P.M., Eastern Time.
   - Give the MRA representative the information you gathered in Step 1.
   - Complete the Inquiry Contact Form at https://www.verifone.com/en/us/contact-us.
   - Address the Subject box to “Verifone MRA Dept.”

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- Reference the model and part number in the Note box.

Each M450 returned to Verifone requires a distinct MRA number to be issued. Even if you are returning multiple terminals of the same model, ensure that a separate MRA number is issued for each unit.

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:

- Detail the issue(s) with the M450.
- Furnish the shipping address for the return of the repaired or replacement unit.
- Maintain a record of the following elements:
  - Assigned MRA number(s).
  - Verifone serial number linked to the M450 being sent for service or repair (located on the back of the unit).
  - Shipping documentation, including air bill numbers utilized for shipment tracking.
  - Model(s) returned (model numbers can be found on the Verifone label on the back of the M450 device).

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7. Troubleshooting Guidelines

This chapter compiles common instances of malfunctions that may arise during the operation of your device, along with the corresponding steps to address them. The troubleshooting guidelines outlined in the subsequent sections are incorporated to facilitate the effective installation and configuration of the device. Should you encounter challenges in operating your unit, please refer to these troubleshooting examples. If the issue persists despite following the provided guidelines or if the problem is not covered, kindly reach out to your local Verifone representative for further assistance.

NOTE

The device is equipped with tamper-evident labels and does not contain any user-serviceable parts. It is crucial not to attempt to disassemble the unit under any circumstances. Only perform adjustments or repairs explicitly outlined in this guide. For any other services, please contact your local Verifone service provider. Utilizing services from unauthorized parties may potentially void any existing warranty.

CAUTION

All units require the use of a power supply. Only use a Verifone-supplied power pack. Using an incorrectly rated power supply may damage the unit or cause it to malfunction. Ensure that the power supply used to power the unit matches the specified requirements on the back of the unit (refer to Specifications for detailed power supply specifications) before troubleshooting. If not, obtain the appropriately rated power supply before continuing with troubleshooting.

Toutes les unités nécessitent l'utilisation d'une alimentation. Utilisez uniquement un bloc d'alimentation fourni par Verifone. L'utilisation d'une alimentation mal calibrée peut endommager l'appareil ou l'empêcher de fonctionner correctement. Assurez-vous que l'alimentation électrique utilisée pour alimenter l'unité correspond aux exigences spécifiées à l'arrière de l'unité (voir Spécifications pour les spécifications détaillées de l'alimentation électrique) avant le dépannage. Dans le cas contraire, procurez-vous une alimentation électrique appropriée avant de poursuivre le dépannage.

Device Does Not Start

Device does not start or display any correct readable information.

- Ensure that the device is plugged in to a dedicated power source.
- Check all the cable connections. Also, check if the power cable connector is plugged in properly.
- If the problem persists, contact your local Verifone representative for assistance.

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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 is in screen-saver mode, then 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 the magnetic card reader:

1. Perform a 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 the smart card reader:

1. Perform a 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 SAM cards are properly inserted in the slots and are properly secured (see SAM Card).
4. Contact your local Verifone representative if the problem persists.

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Checking CTLS Reader

To check the CTLS reader:

- Ensure that there is no obstruction in between the contactless logo and the card, that is, in between the contactless reader and the actual card itself to perform a smooth transaction.

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