

V400m Plus 3G & V400m Bases

Installation Guide

VERIFONE
CONFIDENTIAL
DRAFT

V400m Plus 3G & V400m Bases Installation Guide

© 2016 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, visit <http://www.verifone.com/terms>.

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

Verifone Inc.
1-800-Verifone
www.verifone.com



CONTENTS

PREFACE	5
Audience	5
Organization	5
Related Documentation	5
Guide Conventions	6
Acronym Definitions	6
 CHAPTER 1	
Overview	
V400m Plus 3G	9
Front Functions	9
Back Functions	10
V400m Bases	10
V400m Charging Base	11
V400m Full-Function Base	11
Features and Benefits	11
Exceptional Ease of Use and Ergonomics	12
Critical Security Protection	12
 CHAPTER 2	
Setup	
Selecting Location	13
Environmental Factors	13
Electrical Considerations	14
Contactless Considerations	14
PIN Protection Measures	14
Ensuring User Privacy	15
Unpacking Shipping Carton	15
MSAM, Micro SD and SIM Cards	16
Accessing Card Compartments	16
Changing or Installing MSAMs	16
Changing or Installing a Micro SD Card	17
Changing or Installing a SIM Card	18
Loading Printer Paper	19
Power Supply	19
USB Power Supply	20
Cable Connections	21
Direct USB Connection	21
Powered USB Connection	21
Cable Connections Using the Full-Function Base	22
Smart Card Reader	23
Magnetic Stripe Card Reader	24
Contactless Transactions	24
Optional Accessories	25
Full-Function Base	25
Charging Base	25
Periodic Inspection	26

CHAPTER 3

Specifications

V400m Plus 3G Terminal	27
Unit Power Requirements	27
Temperature	27
Humidity	27
External Dimensions	27
Weight	27
Processor	27
Memory	27
SD Memory	27
Display	28
SAM Card Reader	28
CTLS Reader	28
Magnetic Card Reader	28
Primary Smart Card	28
Speaker	28
Communication	28
Battery Pack	28
Power Pack	29
Integrated Printer	29
Security	29
V400m Bases	29
Unit Power Requirements	29
External Dimensions	29
Weight	29
Security	30

CHAPTER 4

Troubleshooting Guidelines

Display Panel Does Not Work	31
Keypad Does Not Respond	31
Transactions Fail To Process	31

CHAPTER 5

Service and Support

Maintenance and Cleaning	33
Service Returns	33
Accessories and Documentation	35
Cables	35
Base	35
Power Supply	36
Cleaning Kit	36
Documentation	36
Caution and Warning Messages	37



PREFACE

This guide is the primary source of information for setting up and installing the V400m Plus 3G and V400m Bases. The installation should be performed by professional staffs from Verifone.

Audience

This guide provides simple descriptions of the product features and information for installing and configuring the V400m Plus 3G terminal and the V400m Charging and Full-Function Bases.

Organization

This guide is organized as follows:

[Chapter 1, Overview](#). Provides an overview of a V400m Plus 3G & V400m Bases.

[Chapter 2, Setup](#). Explains how to set up and install the V400m Plus 3G & V400m Bases and establish connections with other devices.

[Chapter 3, Specifications](#). Discusses the power requirements and dimensions of the V400m Plus 3G & V400m Bases.

[Chapter 4, Troubleshooting Guidelines](#). Provides troubleshooting tips.

[Chapter 5, Service and Support](#). Provides information on contacting your Verifone service provider, ordering accessories or documentation from Verifone, and maintaining the V400m Plus 3G & V400m Bases.

[Appendix A, Caution and Warning Messages](#). Shows the UL/cUL certification-compliant translations of all Warning and Caution messages in this installation guide.

Related Documentation

To learn more about the V400m Plus 3G and V400m Bases, please refer to the following documents and their associated Verifone Part Numbers (VPN):




<i>V400m Plus 3G Certifications and Regulations</i>	VPN DOC475-001-EN
<i>V400m Plus 3G Quick Installation Guide</i>	VPN DOC475-002-EN
<i>V400m Plus 3G Reference Guide</i>	VPN DOC475-004-EN
<i>V400m B-Charging Quick Installation Guide</i>	VPN DOC475-006-EN
<i>V400m B-FF Quick Installation Guide</i>	VPN DOC475-007-EN
<i>V400m B-Charging Certifications & Regulations Sheet</i>	VPN DOC475-011-EN
<i>V400m B-FF Certifications & Regulations Sheet</i>	VPN DOC475-021-EN

Guide Conventions

Please refer to the following document conventions for quickly identifying 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 Guide Conventions .
<i>Italics</i>	Italic typeface indicates book titles or emphasis.	You <i>must</i> not use this unit underwater.
NOTE 	The pencil icon is used to highlight important information.	RS-232-type devices do not work on the V400m Plus 3G & V400m Bases communication port.
CAUTION 	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.
WARNING 	The lightning symbol is used as a warning when bodily injury might occur.	Due to risk of shock do not use the unit near water.

Acronym Definitions

Please refer to Table 2 for the acronyms used in this manual.

Table 2 Acronym Definitions

Acronym	Definitions
3DES	Triple Data Encryption Algorithm
AC	Alternating Current
ANSI	American National Standards Institute
cUL	Underwriters' Laboratories of Canada
DC	Direct Current
DUKPT	Derived Unique Key Per Transaction Method as defined in the VISA's <i>POS Equipment Requirement: PIN processing and Data Authentication</i> , International Version 1.0, August 1988
ECR	Electronic Cash Register
EMV	Europay, MasterCard, and Visa
ISO	International Organization for Standardization
MRA	Merchandise Return Authorization
MSAM	Multiple Secure Access Module
LAN	Local Area Network
LCD	Liquid Crystal Display
LED	Light-Emitting Diode
PED	PIN Entry Device

Table 2 **Acronym Definitions** (continued)

Acronym	Definitions
PIN	Personal Identification Number
POS	Point-of-Sale
RS-232	Recommend Standard number 232
SAM	Secure Access Module
SD	Secure Digital
UL	Underwriters Laboratories
USB	Universal Serial Bus
VPN	Verifone Part Number

VERIFONE
CONFIDENTIAL
DRAFT

VERIFONE
CONFIDENTIAL
DRAFT

Overview

This chapter describes the features of the V400m Plus 3G and the V400m Bases.

V400m Plus 3G

The V400m Plus 3G is Verifone's next generation integrated retail PINpad device. Its touchscreen functionality and sophisticated design is perfect for high-end retail establishments.

The V400m Plus 3G is a consumer-facing handheld device. It can also be fix-mounted in some integrated retail scenarios. The product's design is equally appealing as a handheld PINpad and robust enough to look and function appropriately in a fixed mount setting.

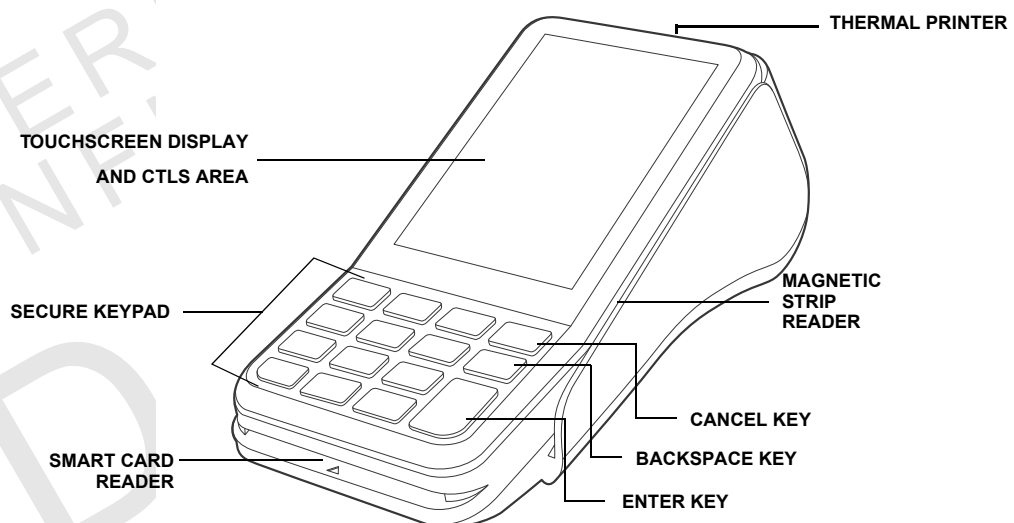


Figure 1 V400m Plus 3G Front

Front Functions The V400m Plus 3G includes the following features:

- Capacitive touch **LCD display** and **CTLS** tap area
- **Smart card** reader
- **Magnetic card** reader
- Integrated thermal **printer**
- Secure keypad supporting 3x5 matrix containing 0-9, *, #, Cancel, Backspace/Clear, and Enter keys.
 - Dual-function Backspace/Clear key.
 - Customer-entry for Cancel and Enter keys.

Back Functions After removing the rear cover and battery, the underside of the V400m Plus 3G shows the following:

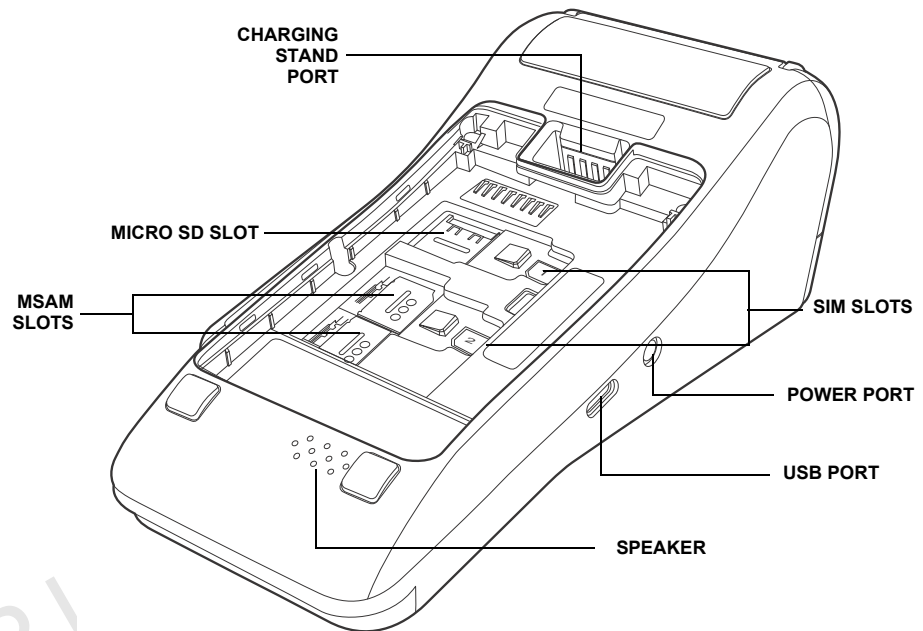


Figure 2 V400m Plus 3G Underside

- A **Micro SD** slot
- Dual **MSAM slots** to support stored-value card programs or other merchant card requirements
- Dual **SIM Card** compartments

V400m Bases

The V400m Base provides a stable mounted platform for the V400m Plus 3G terminal. The Base comes in two versions:

- V400m B Charging
- V400m B Full-Function (FF)

The Charging Base supports charging only with no communication functionality. The FF Base supports several connectivity options and provides serial connection for peripherals (like ECR, check reader, barcode reader, etc.). The USB host port is for maintenance purposes and supports a USB flash drive.

V400m Charging Base The Charging Base accommodates and supplies power to the V400m Plus 3G portable terminal.

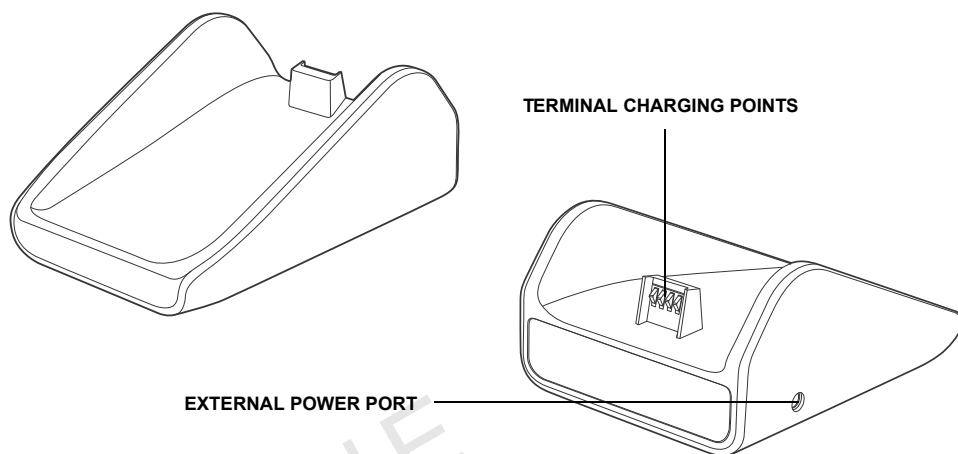


Figure 3 V400m Charging Base, Front and Rear

V400m Full-Function Base The FF Base supports any failover communication via dial up and Ethernet connections. The failover will be supported in all network interfaces available in a terminal.

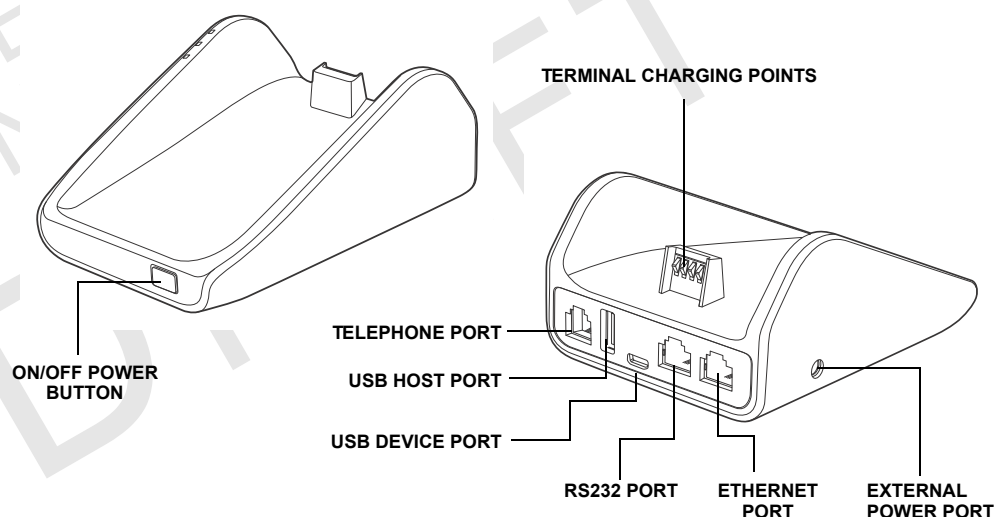


Figure 4 V400m FF Base, Front and Rear

The FF Base supports a minimum of seven simultaneous terminal connections via Bluetooth (BT) as well as the following:

- 10/100M Ethernet
- 56K modem
- USB host
- USB device

Features and Benefits

The V400m Plus 3G terminal and V400m Bases provide the following functionality:

Exceptional Ease of Use and Ergonomics

- Touch screen enables easy menu control and signature capture.
- Battery-powered for mobility and portable operation.
- Integrated thermal printer for fast transaction processing.
- Large, hard-rubber keys provide improved tactile feedback.
- 3.5" capacitive touch screen display.
- 3G-, WiFi-, and Bluetooth-capable.
- Intuitive keypad interface simplify training and reduce support requests.
- Connects with most POS payment terminals, PCs, and ECRs.
- Supports payment transactions in a variety of payment environments.
- Rugged and reliable design absorbs hard knocks found at point-of-sale counters.
- Sleek and stylish shape occupies minimal counter space.
- Bold, ergonomic design fits comfortably in the palm of a hand.
- Optional Charging or Full-Function Bases expand functionality while providing a stable, battery-charging platform.

Critical Security Protection

- Offers a choice of Master/Session or DUKPT key-management methods to protect PIN-based transactions.
- Offers secure, reliable PIN input for expanding range of PIN-based transactions.
- PCI 4.x-compliant for secure solutions, meeting the PED standard.
- Meets ISO and ANSI standards for PIN encryption, key management, and MAC.
- Key injection simplified and secured with Verifone's SecureKit key loading software.



CHAPTER 2

Setup

This chapter describes the setup procedure for the V400m Plus 3G & V400m Bases, in the following sections:

- Selecting Location
- PIN Protection Measures
- Unpacking Shipping Carton
- MSAM, Micro SD and SIM Cards
- Loading Printer Paper
- Power Supply
- Cable Connections
- Smart Card Reader
- Magnetic Stripe Card Reader
- Contactless Transactions
- Optional Accessories
- Periodic Inspection

Selecting Location

Use the following guidelines to select the best location for the V400m Plus 3G & V400m Bases device.

To Select a Location

Choose a location convenient for both merchant and client:

- Far from heavy metal objects,
- A flat support surface such as a countertop or a table,
- Near a power outlet and the terminal or computer that connects to the V400m Plus 3G & V400m Bases.

WARNING



For safety, do not string cables or cords across a walkway.

Environmental Factors

- Do not use the unit where there is high heat, dust, humidity, moisture, or caustic chemicals or oils.
- Keep the unit away from direct sunlight and anything that radiates heat, such as a stove or a motor.

- Do not use the V400m Plus 3G & V400m Bases outdoors.



The V400m Plus 3G & V400m Bases is not waterproof or dustproof and is intended for indoor use only. Any damage to the unit from exposure to rain or dust can void any warranty.

Electrical Considerations

- Avoid using this product during electrical storms.
- Do not use the V400m Plus 3G & V400m Bases unit near water or in moist conditions.
- Disconnect the device from its POS terminal before cleaning.



Due to risk of electrical shock or terminal damage, do not use the terminal near water, including a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool. Also, 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, neon signs, high frequency or magnetic security devices, or electric motors).

Contactless Considerations

Avoid having metallic objects in proximity of the contactless antenna. If you need to mount the terminal to vertical or inclined surfaces, use a flat, non-metallic mounting plate.



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

PIN Protection Measures

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

- Position the terminal 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 stand design.
 - Position the PED 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 terminal 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.

The following table describes the two preferred mounting methods and the recommended measures to protect from 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 instruction of 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.

Ensuring User Privacy

To protect users' privacy when they enter their personal identification number (PIN), the area of visibility should be no larger than a cone taken from the number 5 key at an angle of 45° and covering an area of 270° directly in front of the user.

Unpacking Shipping Carton

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

- 1 Remove the V400m Plus 3G & V400m Bases unit from the shipping carton. The standard package contains the PIN pad, power pack, battery, and printer paper roll. Refer [Accessories and Documentation](#) to for more information about V400m Plus 3G & V400m Bases related accessories.



This device is a secure product and any tampering can cause it to cease to function or operate in an unsecured manner.

- 2 Remove any protective plastic wrap and place the unit on a table or countertop.
- 3 Remove the clear protective film from the display.

- 4 Replace all the packing materials, close the lid, and save the carton for repacking or moving the V400m Plus 3G & V400m Bases unit in the future.



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

MSAM, Micro SD and SIM Cards

You may need to install or replace the multiple security access module (MSAM), Micro Secure Digital (SD) and Subscriber Identity Module (SIM) cards.

Accessing Card Compartments

Use the following procedure in order to access the cardholder compartment.

- 1 Place the terminal face down on a soft and clean surface to protect the lens from scratches.
- 2 Slide to unlock and lift the compartment cover.
- 3 Remove the battery to access the MSAM cardholders.

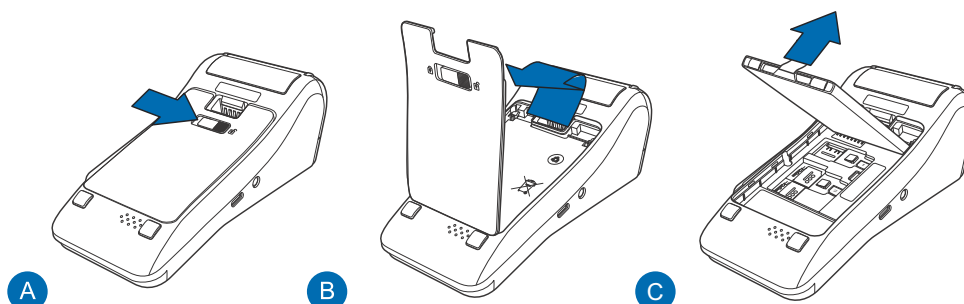


Figure 5 How to Access Cardholders



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

Changing or Installing MSAMs

To change or install MSAM cards:

- 1 Use steps 1 to 3 of [Accessing Card Compartments](#) to get to the MSAM cardholder.

NOTE



The V400m Plus 3G & V400m Bases supports two MSAM cards in a side-by-side configuration.

- 2 Unlock the cardholder and turn upwards to allow the insertion or removal of cards.

- 3 Remove the old card, if any and install the MSAM card by carefully sliding it into the slot (with the gold contacts facing outward) until fully inserted.

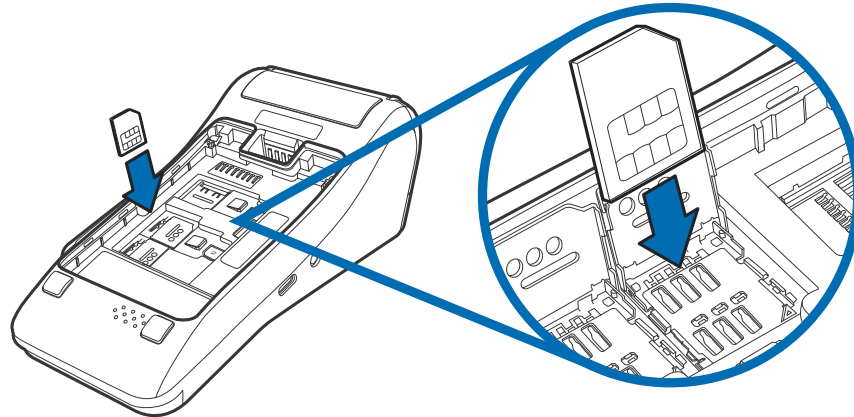


Figure 6 Inserting MSAM Card

- 4 Turn the cardholder back in place and slide the cover to lock the cardholder.
- 5 If you are finished replacing or inserting cards, replace the battery and terminal rear cover. Lock the cover by sliding the tab to the left.

Changing or Installing a Micro SD Card

To change or install a Micro SD card:

- 1 Follow steps 1 to 3 of [Accessing Card Compartments](#) to get to the Micro SD cardholder.

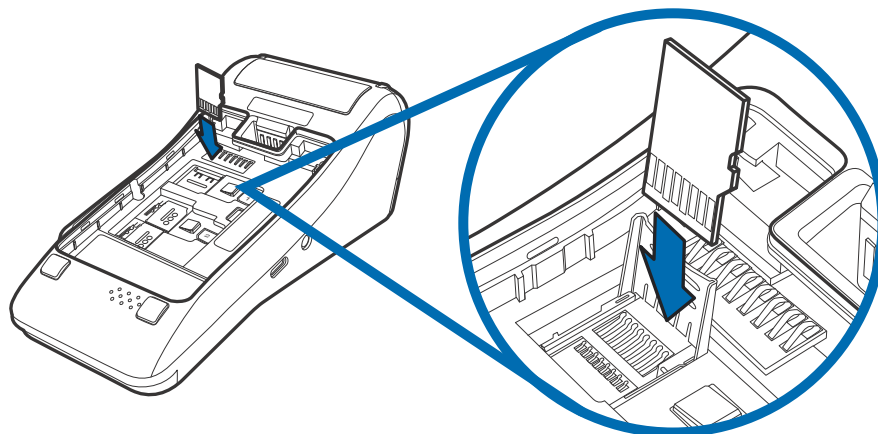


Figure 7 Inserting Micro SD Card

- 2 Unlock the cardholder and turn upwards to allow the insertion or removal of cards.
- 3 Remove the old card, if any and insert the Micro SD card carefully into the cardholder (with the gold contacts facing outward) and turn the cardholder back in place.
- 4 Slide the cover to lock the cardholder closed.

- 5 If you are finished replacing or inserting cards, replace the battery and terminal rear cover. Lock the cover by sliding the tab to the left.

Changing or Installing a SIM Card

To change or install a SIM card:

- 1 Follow steps 1 to 3 of [Accessing Card Compartments](#) to get to the SIM cardholder.

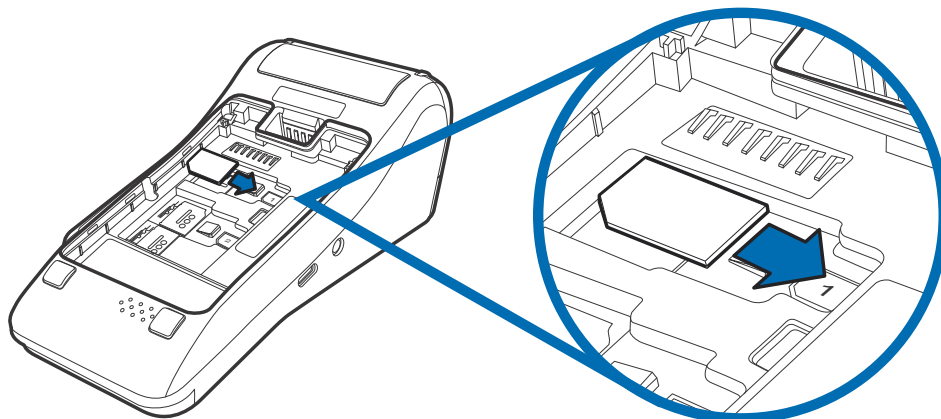


Figure 8 Inserting SIM Card

NOTE



The V400m Plus 3G & V400m Bases supports two SIM cards in a side-by-side configuration.

- 2 Push in the old SIM card, if any, to release it from the slot.
- 3 Carefully insert the new SIM card carefully into the slot facedown (with the gold contacts facing downward).
- 4 If you are finished replacing or inserting cards, replace the battery and terminal rear cover. Lock the cover by sliding the tab to the left.

Loading Printer Paper

Use the following steps to load a roll of 57mm x 40mm thermal printer paper into the compartment.

- 1 Unlock the paper compartment by pulling up the latch and swinging the door downwards.

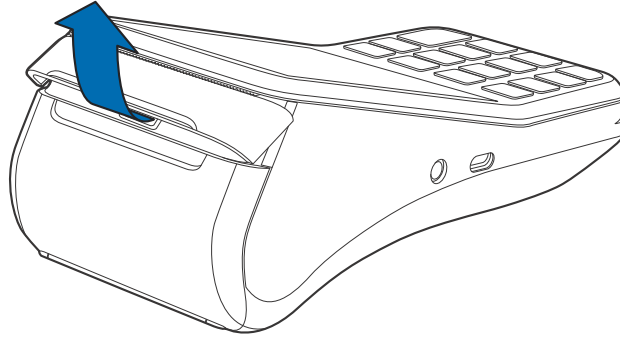


Figure 9 Opening Printer Paper Door

- 2 Load the paper roll as shown in Figure 10, with the edge of the paper on the top of the roll.

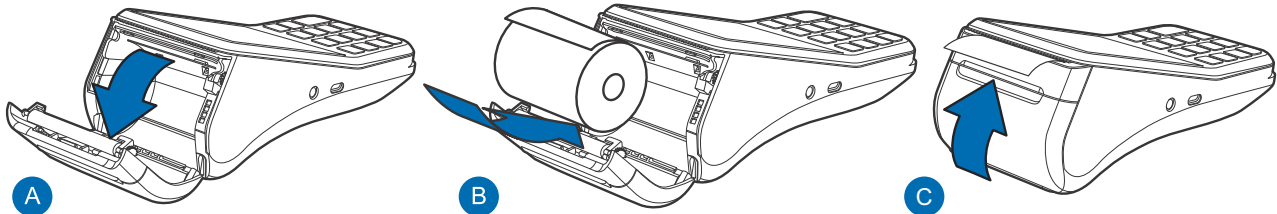


Figure 10 Procedure for Loading Paper Roll

- 3 Pull a length of paper up over the serrated cutter and close the compartment door.



Before processing transactions in battery mode, make sure you have more than 10% battery life. Do not risk losing transaction data or printing capabilities, connect the terminal to the power pack if battery level is below 10%.

Power Supply

Not all configurations and device contexts require the use of a power supply – Verifone ships power supply with the terminal as required.

Contact your Verifone representative If you have changed the context in which the terminal is used or have questions about which power supply should be used.



Using an incorrectly rated power supply can damage the unit or cause it not to work properly. Use only a power pack with VPN PWR475-010-01-A (see [Service and Support](#) for detailed power supply specifications).

Disconnect the power pack cord from the power outlet before connecting a power supply. Connect and route all cables between the terminal, ECR, and PC before plugging the power pack cord into a wall outlet or surge protector.

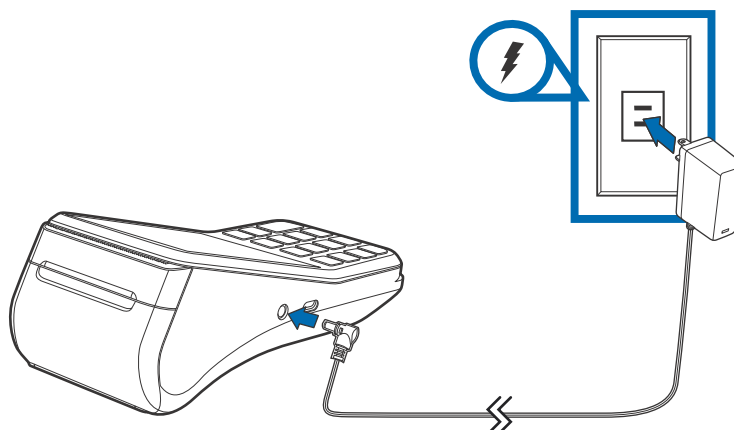


Figure 11 Connecting the Power Pack

WARNING



Do not plug the power pack into an outdoor outlet or operate the terminal outdoors. Disconnecting power during a transaction can cause transaction data files not yet stored in memory to be lost.

NOTE



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

When the terminal has power and an application is loaded, the application starts after the initial Verifone copyright screen and displays a unique copyright screen. If no application is loaded, **DOWNLOAD NEEDED** appears on the display after the initial Verifone copyright screen.

USB Power Supply

V400m Plus 3G & V400m Bases can be powered with 5 V supply from USB port (5 V at 200 mAh) with the following power-saving conditions controlled by the OS:

- Micro-processor operating frequency is set to 300 MHz in CTLS mode.
- Switch off multi-media playback function when CTLS payment mode is activated.
- Reduce audio output volume.
- Reduce LCD backlight intensity to 30%.
- Switch off keypad backlight.
- BT and WiFi functions.

Cable Connections

The V400m Plus 3G & V400m Bases has a couple of USB cabling scenarios:

- Direct USB Connection
- Powered USB Connection



Turn off or unplug the terminal when connecting or disconnecting the device to avoid device memory corruption and data loss.

Refer to the controlling device instructions for any terminal-specific warnings.

Direct USB Connection

Similarly, a USB cable (VPN - CBL282-038-XX-A) is required in standard USB environments. For this cable option, the host end has a molded housing which exposes the standard USB plug.



Figure 12 Connecting to USB-Based Host

Powered USB Connection

A Powered USB cable allows for devices to obtain power through their USB host instead of requiring an independent power supply or external AC adapter. Connect the cable (VPN - CBL282-033-01-A) to the V400m Plus 3G & V400m Bases and plug the male USB connector into the corresponding USB port of the connecting device.



Figure 13 Connecting to USB-Based Host via PoweredUSB.

NOTE



There are two variants of PoweredUSB, one with 12 V DC output and another with 24 V DC. The V400m Plus 3G & V400m Bases only supports 12 V DC option.



Incorrect power sequence may degrade the SoC Host port.

Cable Connections Using the Full-Function Base
To connect the terminal to other devices via Ethernet, RS-232, and USB use the V400m Full-Function (FF) Base that provides a standard RJ-45 LAN socket, RS-232 port, a mini-USB port, and a standard DC jack for an external power connection.

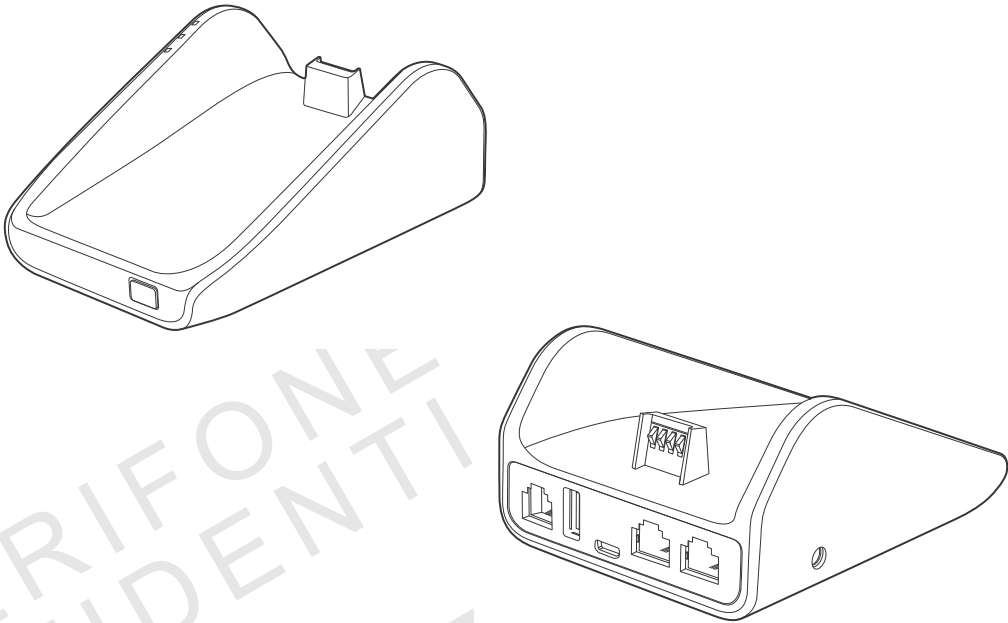


Figure 14 Full-Function Base, Front and Rear View

The Full-Function Base features the following:

Cable	Configuration
Ethernet port	RJ-45 socket (for connecting PINPad to LAN infrastructure)
RS232 port	RS232 socket (for connecting PINPad to LAN infrastructure), MOD-8 socket, Mini USB & DC-in jack
USB ports	Mini USB and type A USB

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.

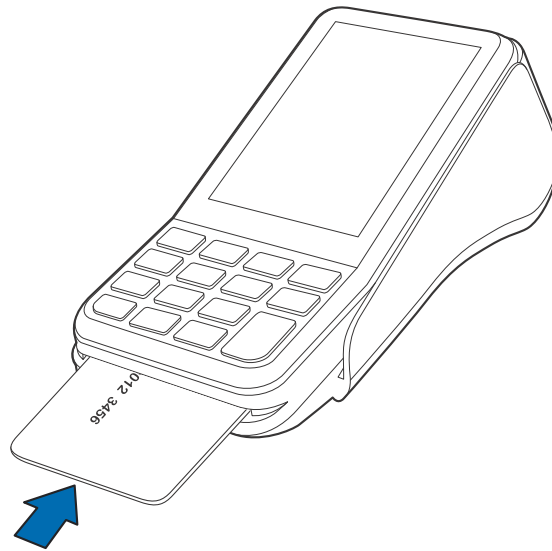


Figure 15 Using the Smart Card Reader

Conducting a Smart Card Transaction

To conduct a smart card transaction:

- 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 seats firmly.
- 3 Remove the card when the display indicates the transaction is completed.



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

Magnetic Stripe Card Reader

The V400m Plus 3G & V400m Bases 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.

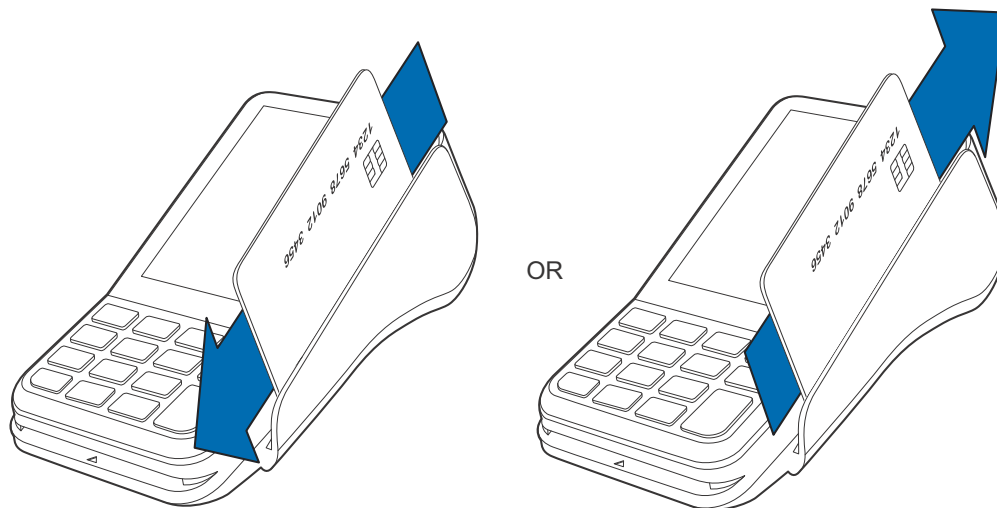


Figure 16 Using the Magnetic Stripe Card Reader

Conducting a Credit/Debit Card Transaction

To conduct a credit or debit card transaction:

- 1 Position a magnetic card with the stripe facing the keypad.
- 2 Swipe it through the magnetic card reader downwards or upwards. The reader can read the card from either direction.

Contactless Transactions

The V400m Plus 3G & V400m Bases supports contactless transactions through an integrated contactless module. The terminal only becomes active for contactless smart card transactions when initialized by an application.

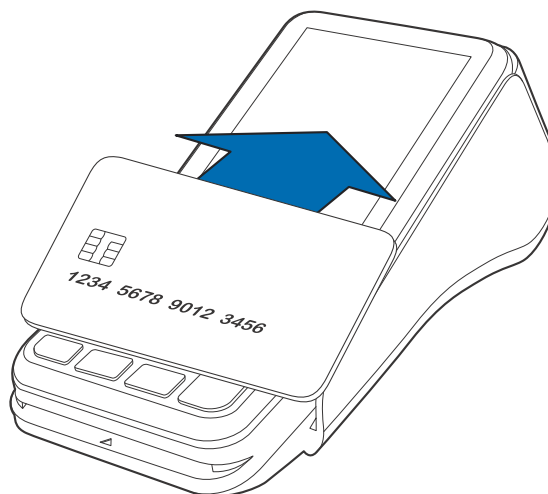


Figure 17 Contactless Transaction

Performing Contactless Transactions

To perform a contactless smart card transaction:

- 1 Gently tap the card onto or hold the card (within 4 cm) against the surface of the display.
- 2 An activated LED visual on the display accompanied by a short beeping sound indicates a successful transaction.

Optional Accessories

These accessories can be used to further enhance the device's functionality. See [Accessories and Documentation](#) for additional information.

Full-Function Base

The Full-Function Base (VPN M475-S02-08) provides Bluetooth (BT) v4.2 as well as All BT v4.1 features. It also supplies power, Dial up, Ethernet, USB Host and USB Device, plus powered RS232 connection.

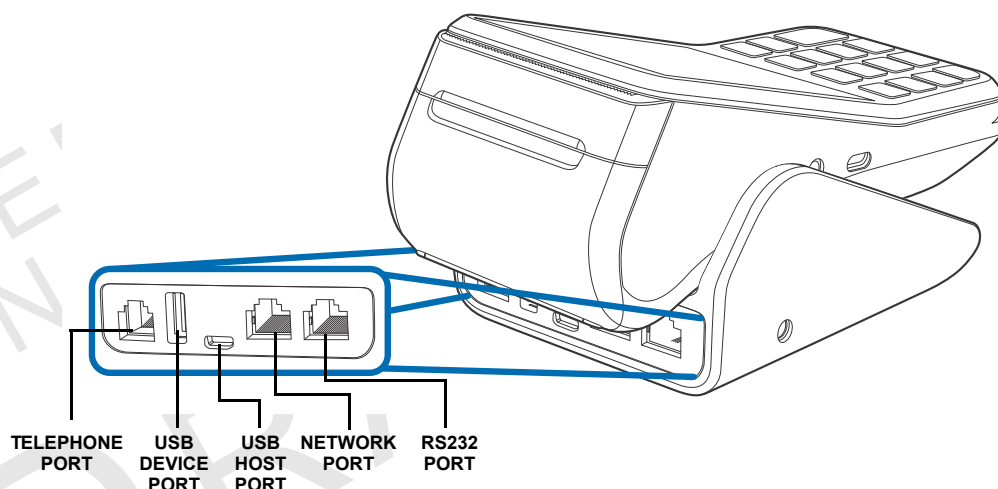


Figure 18 V400m FF Base Connections

Charging Base

The Charging Base (VPN M475-S02-00) provides a stable mount plus power charging for the V400m Plus 3G terminal.

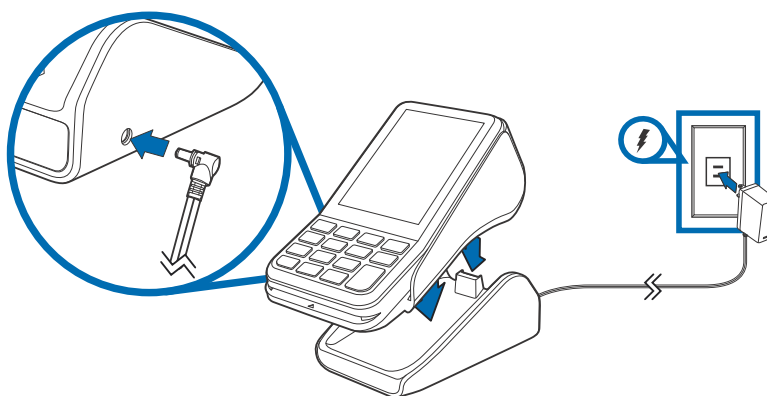


Figure 19 V400m Charging Base Power Connection

Periodic Inspection

Periodically inspect the terminal for possible tampering. Signs of tampering may include:

- Wires protruding from the device.
- Foreign objects inserted into the smart card or mag stripe slot.
- Signs of damage to the tamper-evident label.
- Warning message on the device display.

NOTE

If any device is found in tamper state, please remove it immediately from service. Keep it available for potential forensic investigation, and notify your company security officer and your local Verifone representative or service provider. For more information on contacting Verifone, refer to [Service and Support](#).

VERIFONE
CONFIDENTIAL
DRAFT



Specifications

This chapter discusses power requirements, dimensions, and other specifications of the V400m Plus 3G & V400m Bases devices.

V400m Plus 3G
Terminal

Unit Power
Requirements

- Operating Power: 5 V DC, 2.2 A

Temperature

- Operating temperature: -5° to 50° C (23° to 122° F)
- Storage temperature: -20° to 60° C (-4° to 140° F)

Humidity

- Relative humidity: 5% to 90% (RH non-condensing)

External
Dimensions

- Length: ? 167 mm (6.57 in)
- Width: ? 77 mm (3.03 in)
- Depth: ? 56 mm (2.20 in)

Weight

- Unit weight: ? 274 g (9.66 oz)

Processor

- 32-bit ARM Cortex-A9 RISC Microprocessor
- 600MHz clock speed

Memory

- 6 Gb (LPDDR2: 4 Gb, NAND Flash: 2 Gb) and 3 Gb (LPDDR2: 1 Gb, NAND Flash: 2 Gb)

SD Memory

- 4bit SDIO interface
- Up to 192Mbit/sec (24MByte/sec) in High-Speed SD mode 4bit data transfer
- Speed Class: SDHC Class 2, 4, 6 and 10

Display

- 3.5" capacitive touch screen TFT 320 (RGB) x 480 (HVGA)
- Independent 20X x 13Y sensing for real time touch point reporting
- Supports signature capture by finger or stylus (5 mm)
- I2C interface for touch controller command set

SAM Card Reader

- Primary SC reader and 2-SAMs
- Compatible with ISO7816-3, ISO7816-10 and EMV4.3 standards

CTLS Reader

- CTLS card operating in the RFID 13.56 MHz frequency band
- EMVCo, VISA, MasterCard and PBOC (qPBOC) approved

Magnetic Card Reader

- Triple track (tracks 1, 2, 3), high coercivity, bi-directional
- Swipe speed at 10 IPS to 40 IPS
- Supports Hi/Low coercivity cards

Primary Smart Card

- ISO 7816-3, 1.8 V, 3 V, 5 V
- Synchronous and Asynchronous cards
- EMV Approved

Speaker

- Mono speaker and with an external CODEC (TI TLV320AIC3110)

Communication**Bluetooth**

- BT class 1, 100 m range (line of sight)
- Supports BT v4.2

WiFi

- Supports 2.4 Ghz / 5 Ghz frequency channels

3G Radio

- GPRS/GSM Class 12
- UMTS/HSPA DL 7.2 Mbps, UL 5.7 Mbps

Battery Pack

- Rating: 11.2 Wh (3.5 V DC, 2850 mAH)
- Meets IEEE1725 requirements

Power Pack

- Dual input charger to support charge through power pack or base station
- Supplied by an external universal-input 11 W power supply, compliant with Energy Star VI.
- 5 V 2.2 mAH Output
- 100-240 V, 0.5 A, 50-60 Hz Input

Integrated Printer

- Printing voltage: 9 Volts
- Print Column Width: Option for printing 24/32/42 characters per line
- Supports 57 mm W x 40 mm D paper roll

Security

- 3DES encryption, Master/Session and DUKPT key management
- VeriShield file authentication
- PCI PED 4.0 approved

V400m Bases**Charging Base**

- Provides terminal charging on a mounted stand

Full-Feature Base

- Aside from charging, the FF Base provides:
 - 10/100M Ethernet
 - 56K modem
 - LE Secure feature of BT v4.2 + All BT v4.1 feature
 - USB host
 - USB device

Unit Power Requirements

- Operating Power: 5 V DC, 2.2 A

External Dimensions

- Length:
- Width:
- Depth:

Weight

- V400m Charging Base
 - Unit weight: ? g (oz)
- V400m FF Base
 - Unit weight: ? g (oz)

Security

- PCI 4.0 Compliant

This equipment complies with Part 68 of the FCC rules. Located on the equipment is a label that contains, among other information, the ACTA registration number and ringer equivalence number (REN.) If requested, this information must be provided to the telephone company.

USOC Jack: RJ-11

REN: 0.1A

The REN is used to determine the quantity of devices which may be connected to the telephone line. Excessive REN's on the telephone line may result in the devices not ringing in response to an incoming call. In most, but not all areas, the sum of the REN's should not exceed five (5.0). To be certain of the number of devices that may be connected to the line, as determined by the total REN's contact the telephone company to determine the maximum REN for the calling area.

This equipment cannot be used on the telephone company-provided coin service. Connection to Party Line Service is subject to State Tariffs.

If this equipment causes harm to the telephone network, the telephone company will notify you in advance that temporary discontinuance of service may be required. If advance notice isn't practical, the telephone company will notify the customer as soon as possible. Also, you will be advised of your right to file a complaint with the FCC if you believe it is necessary.

The telephone company may make changes in its facilities, equipment, operations, or procedures that could affect the operation of the equipment. If this happens, the telephone company will provide advance notice in order for you to make the necessary modifications in order to maintain uninterrupted service. Name VeriFone Inc. Address 1401, Aviation Blvd, Lincoln CA 95648, USA Telephone 1-916-408-4900 Web site <http://www.verifone.com> It is recommended that the customer install an AC surge arrester in the AC outlet to which this device is connected. This is to avoid damaging the equipment caused by local lightening strikes and other electrical surges



Troubleshooting Guidelines

This chapter lists typical malfunctions that may occur while operating a V400m Plus 3G terminal or V400m Base and the appropriate corrective action. If the problem persists – even after performing the outlined guidelines, or if the problem is not described, contact your local Verifone representative for assistance.

NOTE



The V400m Plus 3G terminal and V400m Base use a tamper-evident case and 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. For all other services, contact your local Verifone service provider. Service conducted by parties other than authorized Verifone representatives may void any warranty.

Display Panel Does Not Work

Use the following steps to check the display panel:

- 1 Check all the cable connections.
- 2 Check the device's AC outlet to be sure the outlet is supplying sufficient power. Substitute the device's power pack with another power pack.
- 3 The device's application program might not be loaded correctly. Download the application program and try again.
- 4 If the problem persists, contact your local Verifone representative.

Keypad Does Not Respond

Use the following steps to check the keypad:

- 1 Check the display panel. If there are no characters, or the wrong characters are displayed, refer to [Display Panel Does Not Work](#).
- 2 If the problem persists, contact your local Verifone representative.

Transactions Fail To Process

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

Check Magnetic Card Reader

- Perform a test transaction using one or more different magnetic stripe cards to ensure the problem is not a defective card.
- Ensure that you are swiping cards properly (see [Magnetic Stripe Card Reader](#)).
- 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.

- If the problem persists, contact your local Verifone representative.

Check Smart Card Reader

- Perform a test transaction using several different smart cards to ensure the problem is not a defective card.
- Ensure that the card is inserted correctly (see [Magnetic Stripe Card Reader](#)).
- Ensure the MSAM cards are properly inserted in the slots and are properly secured (see [MSAM, Micro SD and SIM Cards](#)).
- If the problem persists, contact your local Verifone representative.

VERIFONE
CONFIDENTIAL
DRAFT



Service and Support

Maintenance and Cleaning

The V400m Plus 3G & V400m Bases have no user-serviceable parts. Unless otherwise instructed, do not, under any circumstances, attempt any service, adjustments, or repairs on the unit. Disconnect power to the devices before cleaning.

To clean the units, periodically 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 (refer to [Accessories and Documentation](#)).



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

Because the V400m Plus 3G & V400m Bases can be damaged by liquid, do not spray cleaners or other solutions directly onto the keypad or display. Always apply the cleaner to a cloth before cleaning the device.

Service Returns

For V400m Plus 3G & V400m Bases equipment failures that cannot be resolved by your help desk or service department, contact one of the following hotlines for 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

Before returning V400m Plus 3G & V400m Bases to Verifone, you must obtain a Merchandise Return Authorization (MRA) number. The following procedure describes how to return one or more V400m Plus 3G & V400m Bases for repair or replacement (U.S. customers only).

NOTE



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

1 Gather the following information from the printed labels on the bottom of *each* V400m Plus 3G & V400m Bases device to be returned:

- Product ID, including the model and part number. For example, "M180-08x-xx-xxx-x"

- Serial number (S/N xxx-xxx-xxx)

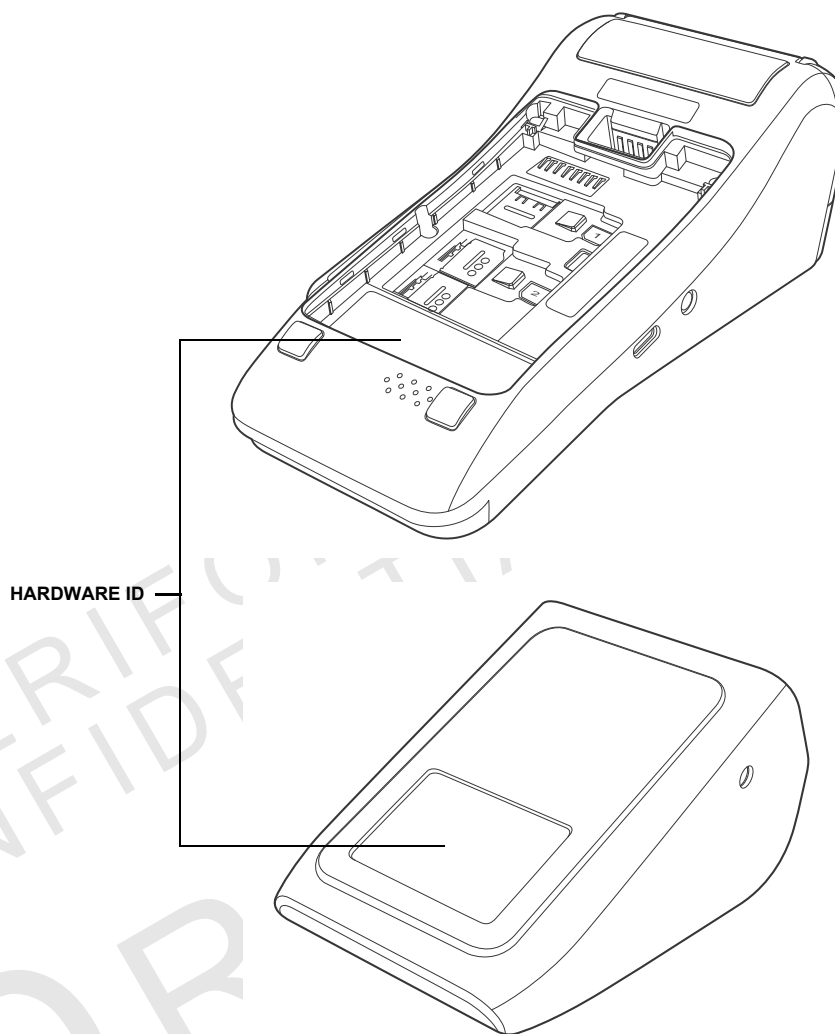


Figure 20 Finding the Product ID and Serial Number

- 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, you can fax the list, along with the information gathered in [Step 1](#), to the MRA department at 1-727-953-4172 (U.S.)
 - 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 V400m Plus 3G & V400m Bases unit you return to Verifone, even if you are returning several of the same model.

- 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).
 - The serial number assigned to the V400m Plus 3G & V400m Bases device (located at 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 bottom of the unit).

Accessories and Documentation

Verifone produces accessories and documentation for the V400m Plus 3G & V400m Bases. When ordering, please refer to the part number in the left column.

- Verifone Online Store at www.store.verifone.com
- USA – Verifone Customer Development Center, 1-800-Verifone (837-4366)
Monday - Friday, 7 A.M. - 5 P.M., MST
- International – Contact your Verifone representative

Cables Contact your local Verifone distributor to determine which cable fits your needs.

CBL282-036-XX-A	RS-232 cable (RJ45). Powered from Countertop (+12 V).
CBL282-006-01-B	Cable, VX 820 Ethernet/RS232, Dongle 1.0 M
CBL435-005-02-A	Ethernet and Mini-USB Dongle
CBL435-044-01-A	Cable, USB/Ethernet/RS232, Dongle 1.0 M

Base

M475-S02-00	V400m B Charging Base
M475-S02-08	V400m B Full-Function (FF) Base

Power Supply

PWR475-010-01-A	DC power pack (US)
BPK475-001-01-A	Battery Pack (11.2 Wh, 3.85 V DC, 2890 mAh)

Cleaning Kit

02746-01	Verifone Cleaning Kit
----------	-----------------------

Documentation

DOC475-001-EN	V400m Plus 3G & V400m Bases Plus Certifications and Regulations
DOC475-002-EN	V400m Plus 3G & V400m Bases Quick Installation Guide
DOC475-004-EN	V400m Plus 3G & V400m Bases Reference Guide
DOC475-006-EN	V400m B-Charging Quick Installation Guide
DOC475-007-EN	V400m B-FF Quick Installation Guide
DOC475-011-EN	V400m B-Charging Certifications & Regulations Sheet
DOC475-021-EN	V400m B-FF Certifications & Regulations Sheet

VERIFONE
CONFIDENTIAL
DRAFT



APPENDIX A

Caution and Warning Messages

Products with UL/cUL certification should include French translations of Caution and Warning notices. The following table lists all notices found in the document, their location, and the equivalent French translations.

Table 4 Caution and Warning Messages

Notice	Chapter	Page	English Text	French Text
Warning	Setup	page 13	For safety, do not string cables or cords across a walkway.	<i>Par mesure de sécurité, ne pas les câbles de chaîne ou de cordons à travers une passerelle.</i>
Caution	Setup	page 14	This unit is not waterproof or dustproof, and is intended for indoor use only. Any damage to the unit from exposure to rain or dust can void any warranty.	<i>Cet appareil n'est pas étanche ou à la poussière, et est destiné à une utilisation en intérieur. Tout dommage à l'unité de l'exposition à la pluie ou à la poussière peut annuler la garantie.</i>
Caution	Setup	page 14,	Using an enclosed metal frame or mount may negatively affect contactless performance.	<i>L'utilisation d'un cadre métallique fermé ou de montage peut affecter négativement contact performance.</i>
Warning	Setup	page 14	Due to risk of electrical shock or terminal damage, do not use the terminal near water, including a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool. Also, 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, neon signs, highfrequency or magnetic security devices, or electric motors).	<i>Du fait d'un risque d'électrocution ou d'une détérioration du terminal, ne pas utiliser cet équipement près d'une source d'eau, par exemple près d'une baignoire, d'un lavabo, d'un évier de cuisine ou d'un bac de lavage, dans un sous-sol humide ou à proximité d'une piscine. De même, éviter d'utiliser ce produit lors des orages provoquant des coupures électriques. Éviter de placer le terminal à proximité d'appareils électriques ou autres unités pouvant entraîner des fluctuations de tension importantes ou des interférences électriques, tels que les climatiseurs, enseignes au néon, dispositifs de sécurité à haute fréquence ou équipements électriques.</i>
Caution	Setup	page 15	This device is a secure product and any tampering can cause it to cease to function or operate in an unsecured manner.	<i>Cet appareil est un produit sûr et toute manipulation peut l'amener à cesser de fonctionner ou fonctionner de manière non sécurisée.</i>

Table 4 **Caution and Warning Messages** (continued)

Notice	Chapter	Page	English Text	French Text
Warning	Setup	page 16	Do not use a unit that has been tampered with or otherwise damaged. This unit comes equipped with tamper-evident label. If a label or component appears damaged, immediately notify the shipping company and your Verifone representative or service provider.	<i>Ne pas utiliser un appareil qui a été altéré ou endommagé. Cet appareil est équipé d'étiquette d'inviolabilité. Si une étiquette ou d'un composant semble être endommagé, en aviser immédiatement la compagnie maritime et votre représentant Verifone ou prestataire de services.</i>
Caution	Setup	page 16	Observe standard precautions in handling electrostatically sensitive devices. Electrostatic discharges can damage the equipment. Verifone recommends using a grounded anti-static wrist strap.	<i>Respecter les précautions standard dans la manipulation d'appareils sensibles aux décharges électrostatiques. Les décharges électrostatiques peuvent endommager le matériel. Verifone recommande d'utiliser un bracelet anti-statique à la terre.</i>
Caution	Setup	page 19	Using an incorrectly rated power supply can damage the unit or cause it not to work properly. Use only a power pack with VPN PWR435-001-01-A.	
Caution	Setup	page 20	Do not plug the power pack into an outdoor outlet or operate the terminal outdoors. Disconnecting power during a transaction can cause transaction data files not yet stored in memory to be lost.	
Warning	Setup	page 21	Turn off or unplug the terminal when connecting or disconnecting the device to avoid device memory corruption and data loss. Refer to the controlling device instructions for any terminal-specific warnings.	<i>Éteignez ou débranchez le terminal pour connecter ou déconnecter le dispositif pour éviter la corruption de la mémoire de l'appareil et la perte de données. Reportez-vous aux instructions de l'appareil de contrôle pour tous les avertissements spécifiques au terminal.</i>
Caution	Setup	page 23	Leave the smart card in the card reader until the transaction is completed. Premature removal can void the transaction.	

Table 4 **Caution and Warning Messages** (continued)

Notice	Chapter	Page	English Text	French Text
Warning	Setup	page 21	Incorrect power sequence may degrade the SoC Host port.	
Caution	Service and Support	page 33	Never use thinner, trichloroethylene, or ketone-based solvents – they can deteriorate plastic or rubber parts. Because this device can be damaged by liquid, do not spray cleaners or other solutions directly onto the keypad or display. Always apply the cleaner to a cloth before cleaning the device.	<i>N'utilisez jamais de diluant, le trichloréthylène ou des solvants cétoniques - ils peuvent détériorer les pièces en plastique ou en caoutchouc. Parce que cet appareil peut être endommagé par un liquide, ne pas vaporiser de nettoyage ou d'autres solutions directement sur le clavier ou l'écran. Toujours appliquer le nettoyant sur un chiffon avant de nettoyer l'appareil.</i>

VERIFON
CONFIDENTIAL
DRAFT



Verifone, Inc.
1-800-Verifone
www.verifone.com

VERIFONE
CONFIDENTIAL
DRAFT

V400m Plus 3G & V400m Bases

Installation Guide

