Vˣ680

Installation Guide

V E R I F O N E
C O N F I D E N T I A L

D R A F T

R E V I S I O N   A . 3

Vˣ680 Installation Guide
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WARNING

Do not dispose of the Vx680 Li-ion smart battery in a fire. Li-ion batteries must be recycled or disposed of properly. Do not dispose of Li-ion batteries in municipal waste sites.

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CHAPTER 3
Specifications

CHAPTER 4
Maintenance

CHAPTER 5
VeriFone Service and Support

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REVISION A.3

This guide is your primary source of information for setting up and installing the Vˣ680 terminal.

Audience

This guide is useful for anyone installing and configuring a Vˣ680 terminal. Basic descriptions of the terminal features are also provided.

Organization

This guide is organized as follows:

Chapter 1, Terminal Overview. Provides an overview of the Vˣ680 terminal.

Chapter 2, Terminal Setup. Explains how to set up and install the Vˣ680 terminal. It tells you how to select a location, establish power and telephone line connections, and how to configure optional peripheral devices.

Chapter 3, Specifications. Discusses power requirements and dimensions of the Vˣ680 terminal.

Chapter 4, Maintenance. Explains how to maintain your Vˣ680 terminal.

Chapter 5, VeriFone Service and Support. Provides information on contacting your local VeriFone representative or service provider, and information on how to order accessories or documentation from VeriFone.

Chapter 6, Troubleshooting Guidelines. Provides troubleshooting guidelines, should you encounter a problem in terminal installation and configuration.

Related Documentation

To learn more about the Vˣ680 terminal, refer to the following set of documents:

Vˣ680 Certifications and Regulations Sheet	VPN DOC268-001-EN-A
Vˣ680 Quick Installation Guide	VPN DOC268-002-EN-A
Vˣ680 Reference Manual	VPN DOC268-004-EN-A
Vˣ680 Full-Featured Base and Dongle Quick Installation Guide	VPN DOC268-006-EN-A
Vˣ680 Standard Base Quick Installation Guide	VPN DOC268-005-EN-A
Verix EOS Volume I: Operating System Programming Manual	VPN DOC00301
Verix EOS Volume II: Operating System and Communications Programmers Manual	VPN DOC00302
Verix EOS Volume III: Operating System Programming Tools Reference Manual	VPN DOC00303

Conventions and Acronyms

This section describes the conventions and acronyms used in this guide.

Document Conventions

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

Table 1   Document Conventions

Convention	Meaning	Example
Blue	Text in blue indicates terms that are cross referenced.	See Conventions and Acronyms.
Italics	Italic typeface indicates book titles or emphasis.	You *must* install a roll of thermal-sensitive paper in the printer.
Courier	The courier type face is used while specifying onscreen text, such as text that you would enter at a command prompt, or to provide an URL.	http://www.verifone.com
NOTE	The pencil icon is used to highlight important information.	RS-232-type devices do not work with the PINpad port.
CAUTION	The caution symbol indicates possible hardware or software failure, or loss of data.	The terminal 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 terminal near water.

Acronym Definitions

Various acronyms are used in place of the full definition. Table 2 presents acronyms and their definitions.

Table 2   Acronym Definitions

Acronym	Definitions
AC	Alternating Current
CDMA	Code Division Multiple Access
EMV	Europay MasterCard and VISA
GPRS	General Packet Radio Service
GSM	Global System for Mobile Communication
HDMI	High-Definition Multimedia Interface
ITP	Internal Thermal Printer
LCD	Liquid Crystal Display

Table 2   **Acronym Definitions**

Acronym	Definitions
LED	Light Emitting Diode
MRA	Merchandise Return Authorization
MSAM	Micromodule-Size Security Access Module
PED	PIN-Entry Devices
PIN	Personal Identification Number
RJ45	Registered Jack 45
RS-232	Recommended Standard 232
SAM	Security Access Module
SIM	Subscriber Identity Module
UART	Universal Asynchronous Transmitter/Receiver
USB	Universal Serial Bus
VPN	VeriFone Part Number
Wi-Fi	Wireless Fidelity

Terminal Overview

This chapter provides a brief description of the Vˣ680 terminal, the smallest all-in-one wireless handheld payment device. This terminal packs a wallop: large color/touch display, blazing fast processor, abundant memory, the latest PCI 2.0 security, and integrated contactless; all in the same familiar small Vˣ670 form factor.

The Vˣ680 terminal is a portable, battery-powered device designed to fit comfortably to the hands and is ideal for consumer-facing applications. It features a vibrant colored 3.5" TFT QVGA display and a backlit spill-resistant keypad.

NOTE	VeriFone ships variants of the Vˣ680 terminal for different markets. Your terminal may have a different configuration. The following devices may or may not be present: a smart card reader, zero or three MSAM cardholders, and/or a SIM cardholder.

Figure 1   The Vˣ680 terminal

Features at a glance

- **400 mHz ARM11 RISC processor** delivers **power** and **usability** in a **convenient** "hand-over" design

- **Multi-application** operating environment

- **Advanced memory architecture** to meet tomorrow's needs with support for 192 MB

- **Backward compatibility** with VeriFone solutions help **reduces development costs**

- **Drop resistant** design minimizes breakage

- **32-bit processing** and **multi-tasking** capabilities

- **Security** architecture exceeds specifications for PCI-PED and sophisticated **file authentication**

- Securely supports and runs **payment** and **value-added applications** along with signature capture

- Offers **unsurpassed performance** on **EMV** smart card transactions

- **Max UI design** provides **large 3.5" color QVGA display**, and large blue backlit keys for easier viewing

- Adds **vibrant color** and **touchscreen** to the smallest purpose-built wireless payment device

- **Multiple connectivity and Contactless** options

- **Spill-resistant design** forces liquid down and off the front of the terminal

- **USB support** for VeriFone peripheral devices

Features and Benefits

Vˣ680 terminals provide the right combination of features and functions including a triple-track magnetic-stripe card reader, smart card reader, integrated PIN pad, color/touch display, optional contactless support, and a quiet yet fast internal thermal printer (ITP).

Exceptional Ease of Use

- Lightweight (less than 1 pound), tapered design, compact, stylish and the ergonomic balance allows convenient terminal hand-off to the consumer for PIN entry or other input

- Large 3.5" color TFT display for boundless application possibilities and easy readability under diverse lighting conditions

- Large, well-placed and blue backlit keys provide improved tactile response to simplify usage and minimize finger slips

- 38 mm diameter paper roll with a trouble-free, drop-in, "clam shell" loading and dual tear bar that allows receipts to be ripped in any direction

- Quiet, fast integrated thermal printer with a rear placement to maximize the user interface area

- Vertical magnetic stripe card reader with an extended blade for optimal card reading

- Touchscreen for icon-based applications or electronic signature capture support

- Optional hands-free holster is available that fits to the server's or clerk's belt so that the POS device can be quickly removed and easily handed to the customer

Performance and Durability

- Powerful 400 mHz ARM11 processing completes transactions in seconds
- High-capacity 7.2 V 1800 mA lithium-ion battery can easily be swapped with one hand
- Standard base for drop-and-go charging or optional full-featured base with spare battery charging
- With USB ports for connection to supported USB peripherals
- Rounded corners and drop resistant to 3 feet on concrete floor to minimize breakage
- Sealed MSR blade that locks out moisture for outstanding spill resistance
- 192 MB of memory with optional removable SD flash memory

Security

- PCI PED 2.0 approved for debit and other PIN-based transactions
- EMV Level 1 and 2 Type Approval
- Tamper-resistant contruction, SSL protocols, and VeriShield file authentication

Terminal Setup

This chapter describes the terminal setup procedure. You will learn about:

- Selecting Terminal Location.
- Unpacking the Shipping Carton.
- Examining Terminal Features.
- Examining Connection Ports.
- Establishing Telephone Line Connections.

- Installing the Paper Roll.
- Installing/Replacing MSAM Cards.
- Installing/Replacing SIM Card (GSM/GPRS Models Only).
- Using the Smart Battery.
- Battery Behavior (No Power Cable).
- Installing the Smart Battery.
- Charging the Smart Battery.
- Connecting the Terminal Power Pack.
- Using the Base Station.
- Placing the Terminal Onto the Base Station.
- Attaching the USB Dongles to the Base Station.
- Charging the Spare Battery on the Base Station.
- Conducting Wireless Transactions.
- Conducting Smart Card Transactions.

- Using the Magnetic Card Reader.

Selecting Terminal Location

Use the following guidelines when selecting a location for your V^{x}680 terminal.

Environmental Factors

- The V^{x}680 unit is a portable terminal. Select a flat support surface, such as a countertop or table, to keep the terminal safe in between uses.

- Do not use the terminal where there is high heat, dust, humidity, moisture, or caustic chemicals or oils.

- Keep the terminal away from direct sunlight and anything that radiates heat, such as a stove or motor.

- Do not use the terminal outdoors.

CAUTION

The terminal is not waterproof or dustproof, and is intended for indoor use only. Any damage to the unit from exposure to rain or dust may void any warranty.

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).

- Do not use the terminal near water or in moist conditions.

Unpacking the Shipping Carton

Open the shipping carton and carefully inspect its contents for possible tampering or shipping damage. The Vˣ680 device is a secure product and any tampering may cause the terminal to cease to function properly.

To unpack the Shipping Carton

1 Remove and inspect the following items:

- Terminal
- Power pack
- Telephone line cable
- Power cable
- Battery pack
- Paper roll

2 Remove all plastic wrapping from the terminal and other components.

3   Remove the clear protective film from the LCD screen.

CAUTION	Do not use a terminal that has been damaged or tampered with. The V^{x}680 terminal comes equipped with tamper-evident labels. If a label or component appears damaged, please notify the shipping company and your VeriFone representative or service provider immediately.

4   Save the shipping carton and packing material for future repacking or moving the terminal.

Examining Terminal Features   Before you continue the installation process, notice the features of the V^{x}680 terminal (see Figure 2).
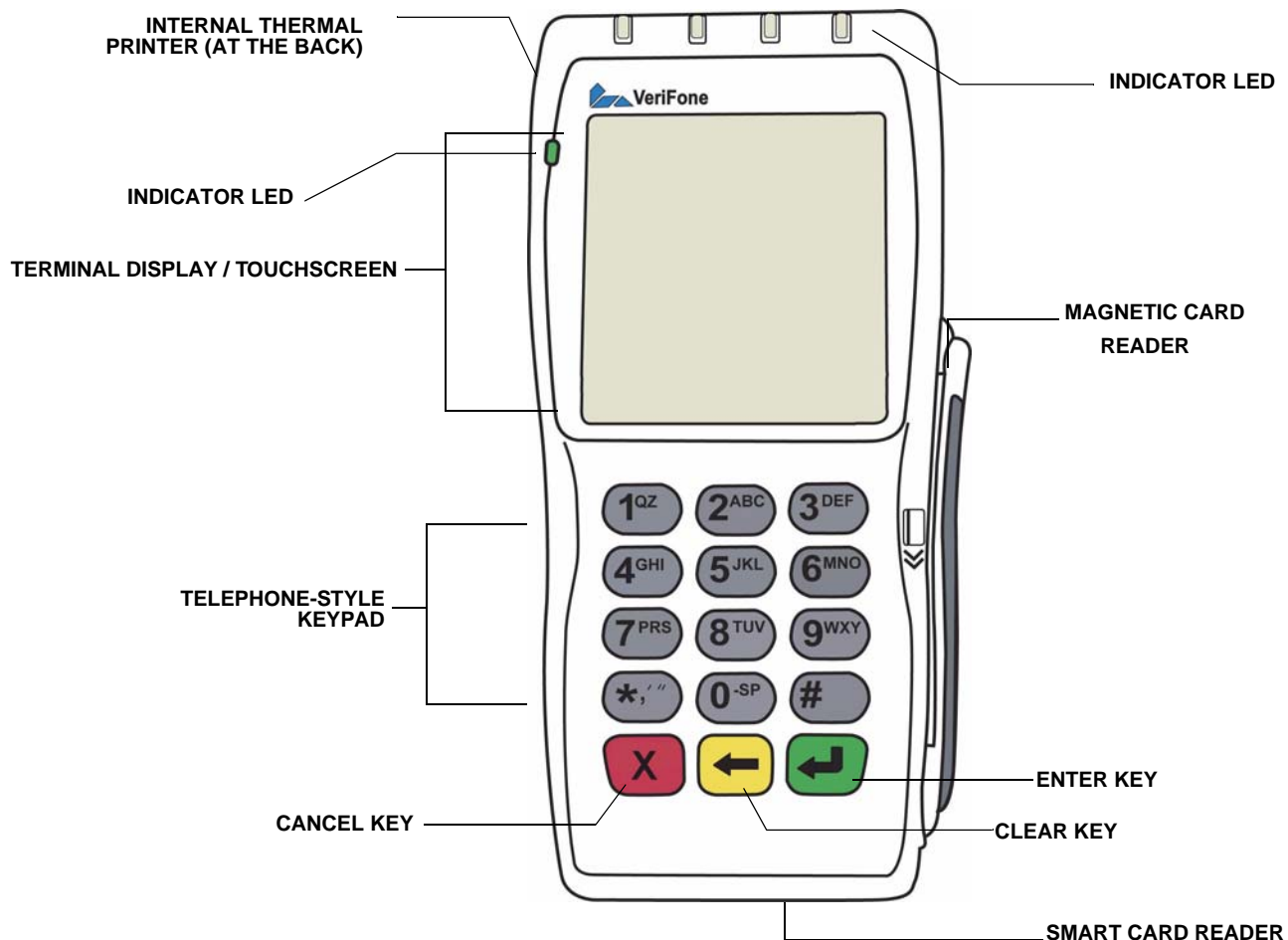

Figure 2   V^{x}680 Terminal Features (Front Panel)

Front Panel   The front panel includes the following features:

*   A Large 3.5" color TFT and touchscreen display.

- Two types of keys:

    a A 12-key, **telephone-style keypad** (keypads may vary in style).

    b Three **color-coded function keys** below the keypad (icons at right; from left to right: CANCEL, CLEAR, ENTER).

- A **magnetic card reader**, built into the right side. Swipe the card using the proper direction, with the magnetic stripe down and facing inward, toward the keypad.

- A green **indicator LED** indicates power is ON.

- Four **indicator LEDs** above the terminal display that indicate what process is being done.

- An **internal thermal printer** at the back of the terminal.

- A **smart card reader**, built into the front of the terminal. For directions on how to use a smart card, see Conducting Smart Card Transactions.

- A **SAM (security access module) compartment**, built into the bottom of the terminal. The Vˣ680 terminal contains an MSAM cardholder to support stored-value card programs or other merchant card requirements.

NOTE VeriFone ships variants of the Vˣ680 terminal for different markets. Your terminal may have a different configuration. The following devices may or may not be present: a smart card reader, or an MSAM cardholder. However, the basic processes described in this guide remain the same, regardless of terminal configuration.

Examining Connection Ports

The Vˣ680 terminal has one primary port that supports different peripherals through the use of various cables.
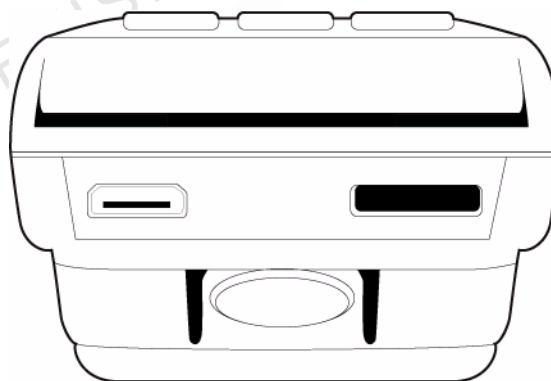
Figure 3   The Vˣ680 Primary Port (Bottom View)

Power Adapter Cable

Each Vˣ680 terminal comes with a power adapter cable (VPN 08641-01-R) that completes the connection between the power pack and the terminal.
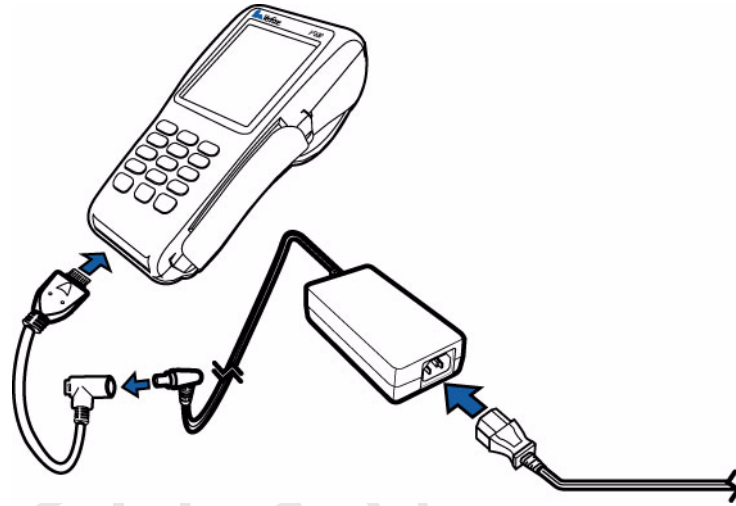
Figure 4   Power Adapter Cable Connection to a Vˣ680 Terminal

USB Host Cable

The Vˣ680 terminal also provides a 2-Wire USB Host port (VPN 08640-01-R) to support for external peripherals. A connector adaptor provides for standard USB host connection for the Modem Dongle or the RS232 UART Dongle.

Figure 5   USB Host Cable Connection to a Vˣ680 Terminal

Multiport Adapter An optional multiport adapter (VPN 08643-01-R) provides connectivity for power, USB Host, USB Device, and COM1 (RS232 UART). This cable is used only for deployment or development purposes.
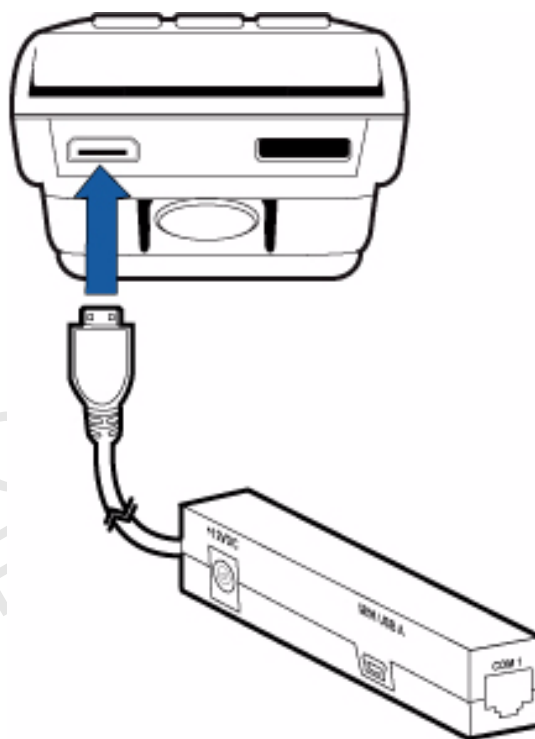
Figure 6   Multiport Adapter Connection to a V^x680 Terminal

> **NOTE**
>
> Other cables are available for different purposes. Check with your local VeriFone representative for further information.

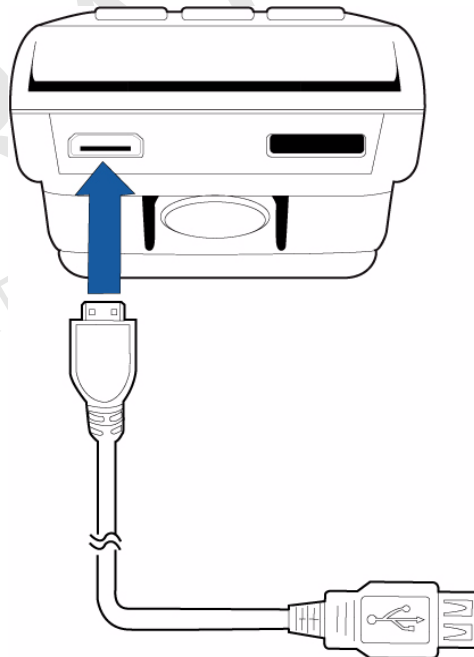**USB Modem Dongle** Use the M26-D10-00 USB Modem Dongle to provide the V^x680 terminal with modem communication over a telephone line at speeds of up to 33,600 bps. It can also be connected to the full-feature Base Station when the terminal is in the station (see Attaching the USB Dongles to the Base Station).

USB Serial Dongle (RS232 UART) The USB Serial Dongle (VPN M267-D01-00) may be purchased with the V^x680 terminal. It is designed to accommodate the RJ45 connector. The USB Serial Dongle can also be connected to the full-feature Base Station when the terminal is placed in the station (see Attaching the USB Dongles to the Base Station).

> **NOTE**
>
> A Base Station may be purchased with the V^x680 terminal or purchased as a separate option full-feature Base Station has two USB host ports for external dongles as well as a battery charger slot for charging an extra lithium-ion battery pack. A standard Base Station does not have any USB ports and is capable of charging the terminal only and not the extra battery pack.

Establishing Telephone Line Connections

To connect a telephone line:

1   Connect one end of the telephone cable to the USB Modem Dongle.

2   Connect the USB Modem Dongle to the terminal using the mini-HDMI Connector (VPN 08640-01-R).

3   Route the other end of the telephone cable directly to a telephone wall jack.

WARNING

To reduce the risk of fire, use only No. 26 AWG or larger UL Listed or CSA Certified Telecommunication Line Cable.
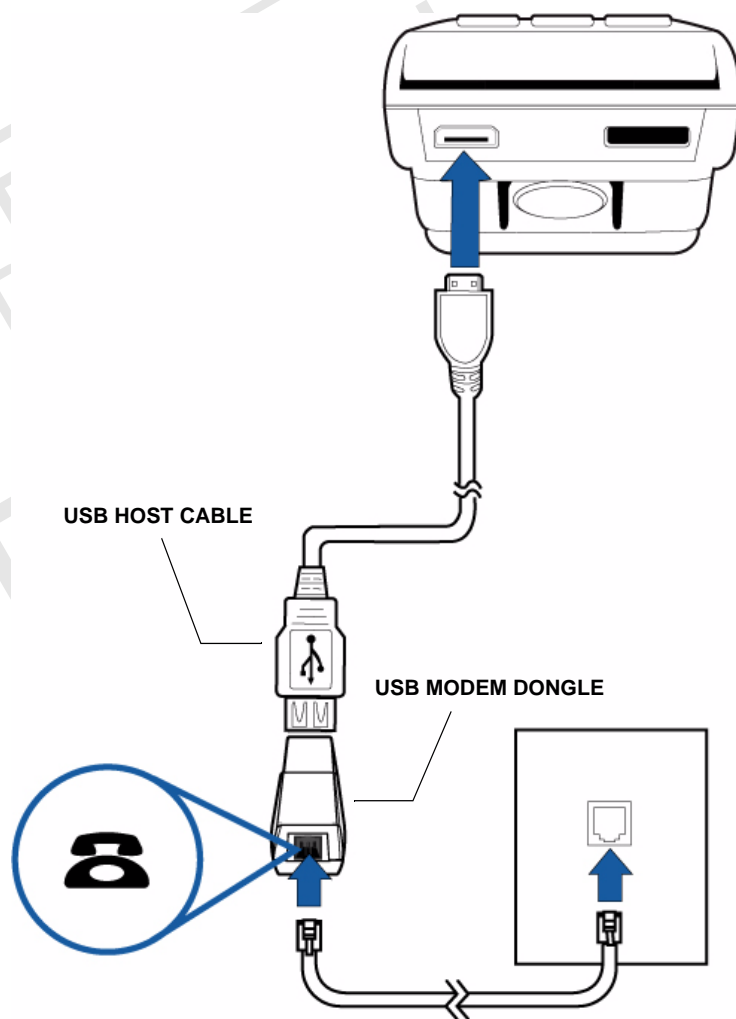

Figure 8   Vˣ680 USB Modem Dongle Connection

Installing the Paper Roll

A fast, quiet thermal printer is built into the Vˣ680 terminal. Before you can process transactions that require a receipt or record, you *must* install a roll of thermal-sensitive paper in the printer.

The ITP uses a roll of single-ply, thermal-sensitive paper 57 millimeters (2.24 inches) wide and 38 millimeters in diameter. A pink *out-of-paper* indicator line appears on the edge of the paper approximately 18 inches before the end of the roll. After this line appears, there is enough paper remaining on the roll to conclude at least one transaction.

CAUTION

Poor-quality paper can jam the printer and create excessive paper dust. To order high-quality VeriFone paper, refer to Accessories and Documentation.

Store thermal paper in a dry, dark area. Handle thermal paper carefully: impact, friction, temperature, humidity, and oils affect the color and storage characteristics of the paper.

Never load a roll of paper with folds, wrinkles, tears, or holes at the edges in the print area.

To Install a Paper Roll

1   Gently pull the latch located on the bottom of the terminal to unlock the paper roll cover.
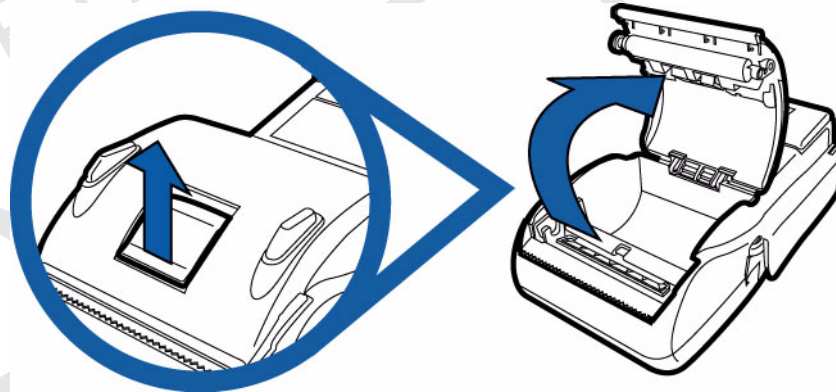
Figure 13   Unlocking the Printer Cover

2 Lift the printer cover up and back.
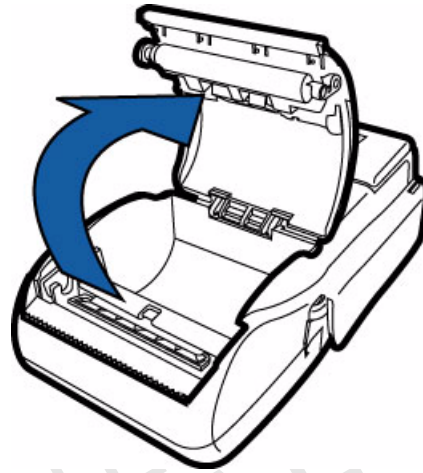
Figure 14   Opening the Printer Cover

3 Remove any partial roll of paper in the printer tray by lifting it up.

4 Loosen the glued leading edge of the paper or remove the protective strip from the new roll of paper. Unwind the paper roll past any glue residue.

5 Hold the roll so the paper feeds from the *bottom* of the roll when the terminal is inverted (see Figure 15).

6 Drop the paper roll into the printer tray.
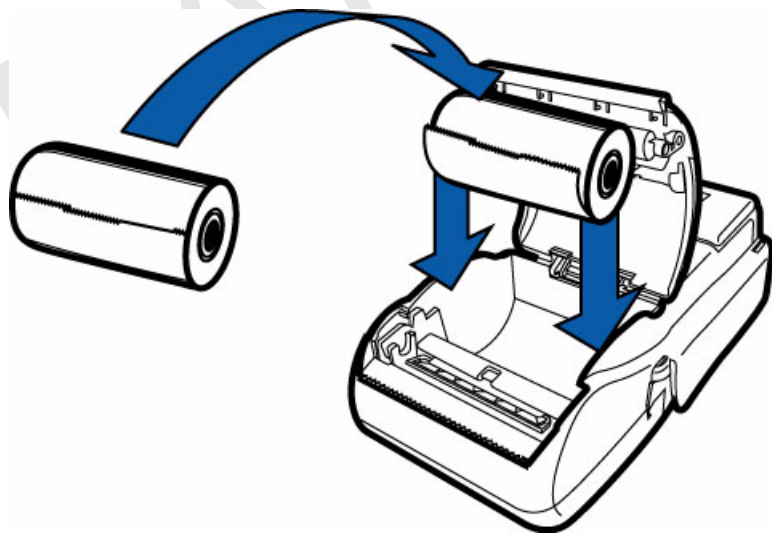
Figure 15   Loading Paper Roll

7 Pull paper up past the glue residue on the paper roll.

8   Close the paper roll cover by gently pressing directly on the cover until it clicks shut, allowing a small amount of paper past the glue residue to extend outside the printer door.

CAUTION

To prevent damaging the print roller, always gently press down on the paper roll cover to close it.
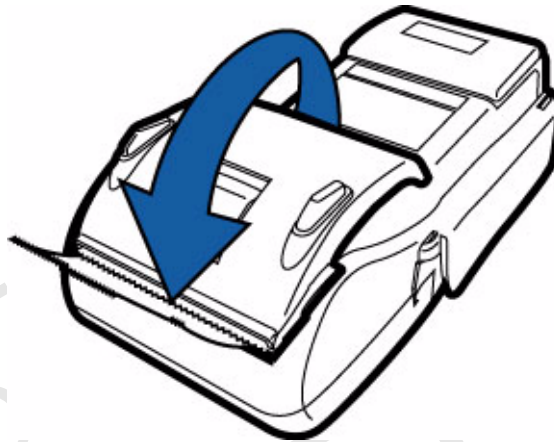
Figure 16   Closing Paper Roll Cover

9   Tear the paper off against the serrated plastic strip in the printer.

Installing/ Replacing MSAM Cards

When you first receive your Vˣ680 terminal, you may need to install an MSAM card or you may need to replace old cards.

CAUTION

Observe standard precautions when handling electrostatically sensitive devices. Electrostatic discharges can damage this equipment. VeriFone recommends using a grounded anti-static wrist strap.

To Install/Replace MSAM

1   Power off the terminal.

CAUTION

It is very important that the terminal is powered off before removing the battery.

2   Place the terminal upside down on a soft, clean surface to protect the display from scratches.

3   Remove the battery.
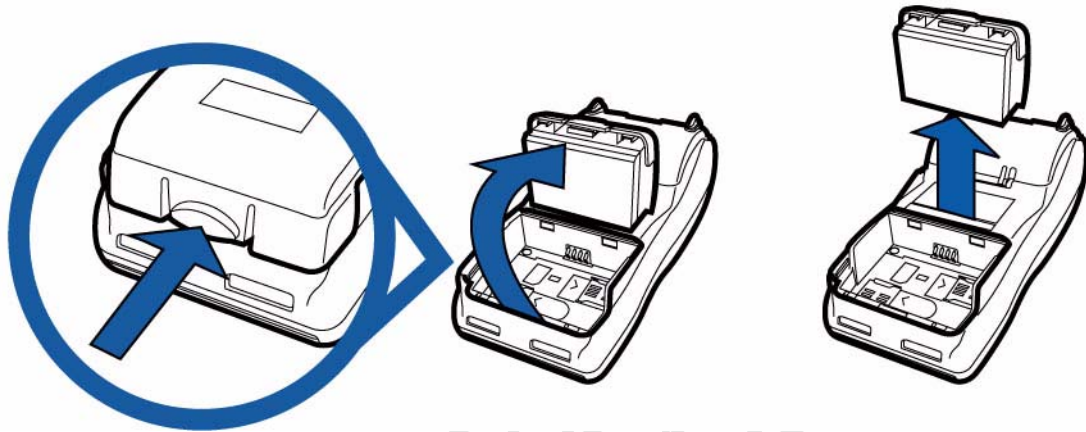
Figure 17   Removing the Smart Battery

4   After removing the battery, the MSAM compartment is exposed.

5   Remove any previously installed MSAM card by sliding the card from the MSAM cardholder.

6   Install an MSAM card by aligning the card and carefully sliding it within the guides on the cover until it is fully inserted (see Figure 18).
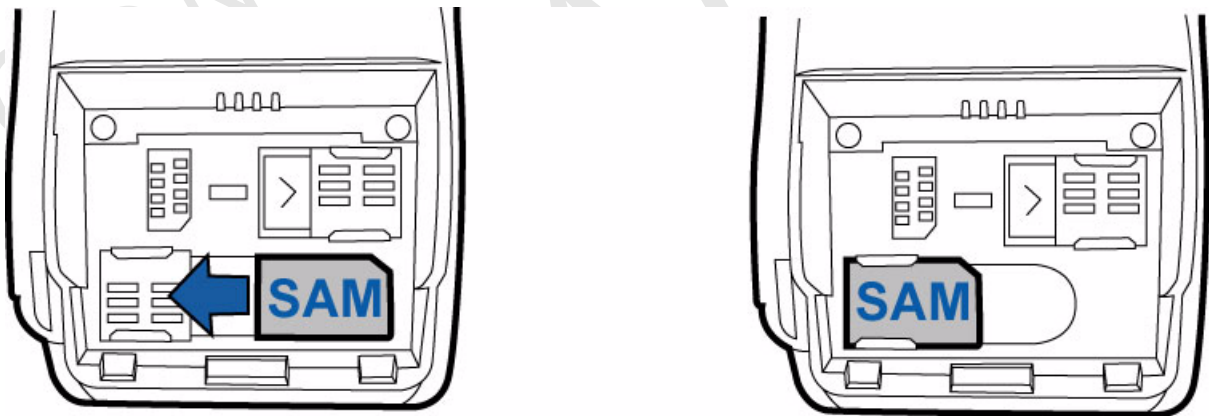
Figure 18   Installing MSAM Card

NOTE   Before inserting the MSAM card, position it as shown in Figure 18, with the card's gold contacts facing the smart card reader end of the terminal. The cardholder connector base has a set of contacts and a notch on one corner to ensure the MSAM card is positioned correctly. The MSAM card has a notch on one corner to ensure that it fits into the connector base in only one way. The MSAM compartment door will not close properly if the MSAM card is installed incorrectly.

7   Install the battery (see Figure 21).

Installing/ Replacing SIM Card (GSM/ GPRS Models Only)

The V^x680 terminal supports the installation of a SIM (Subscriber Identity Module) card. Use the following procedure to replace or install a SIM card.

1   Place the terminal upside down on a soft, clean surface to protect the lens from scratches.

2   Remove the battery.

Figure 19   Removing the Smart Battery

3   After removing the battery, the SIM compartment is exposed. The SIM card holder is labeled RADIO SIM.

4   Insert the SIM into the cardholder.

> **NOTE**
>
> There is only one SIM slot and one SAM slot. Make sure you insert the SIM card into the SIM slot, as shown in Figure 20.

Figure 20   Inserting SIM Card

5   Install the battery (see Figure 21).

Using the Smart Battery

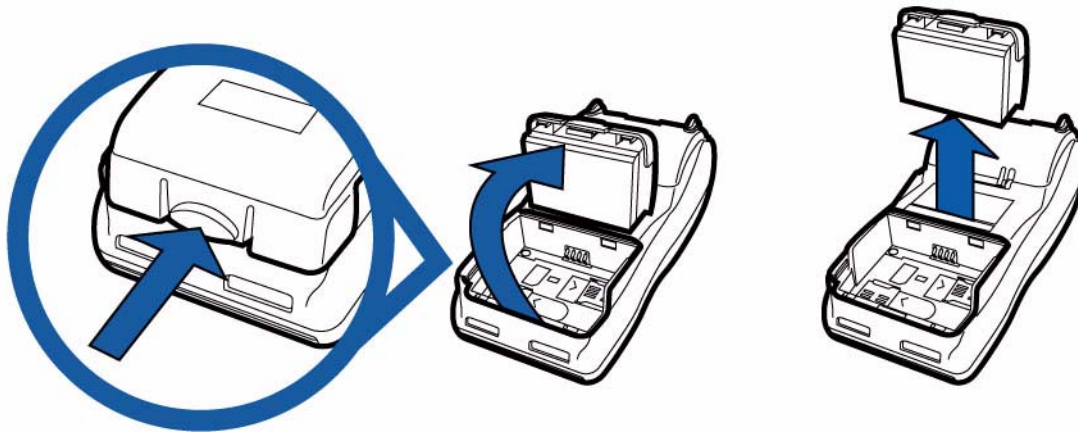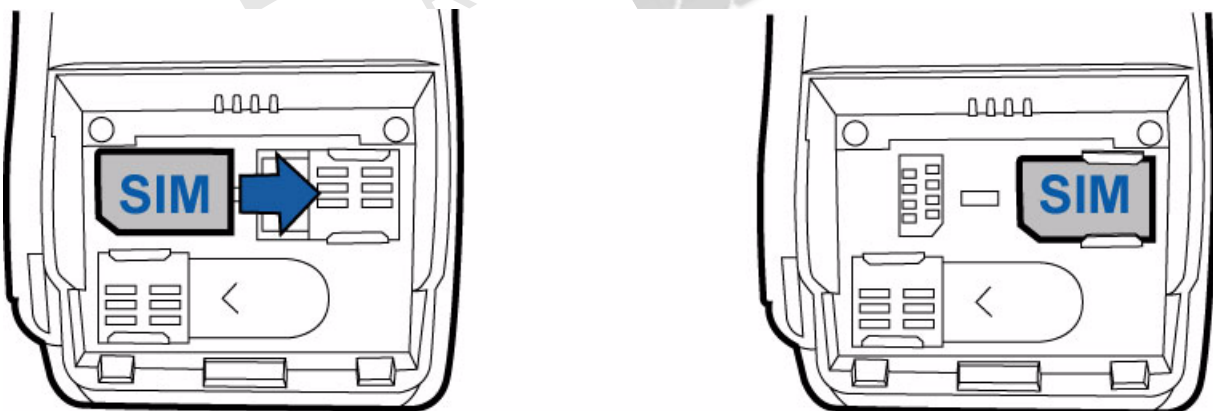The Vˣ680 terminal uses a Li-ion *smart* battery (see Accessories and Documentation for ordering information). The internal logic of the smart battery prevents both overcharging and undercharging (a fault condition in which the battery level goes well below the minimum acceptable charge and the battery becomes unusable).

NOTE The Vˣ680 terminal will operate on battery power or on power pack power. The smart battery charger in the terminal will be active whenever the power pack is connected.

Smart Battery Features

The following are features of the smart battery:

- Two Li-ion cells
- A fuel gauge module that:
    - monitors state of charge (voltage and percentage of capacity),
    - communicates with the terminal (charge parameters and status),
    - determines full charge capacity (on charge cycle and uninterrupted discharge cycle), and
    - automatically shuts down when cell voltage is extremely low.
- A safety circuit that:
    - prevents cell damage from overcharge, over-discharge, or overheating, and
    - activates when the battery is left in an unused terminal for extended periods.

NOTE
- Lithium-ion batteries are not affected by shallow charging. Furthermore, when the terminal has no external power source or smart battery, the coin cell battery provides power to the security circuit.
- Uninstalling the battery and unplugging the terminal power pack reduce the life of the coin cell battery, which does not recharge and must be replaced if drained.
- Conserve battery power by turning the Vˣ680 terminal off when not in use. If the terminal is not to be used for an extended period of time, keep the Lithium-ion battery inserted in the terminal, and power up the terminal periodically to check the battery charge. Do not let the battery charge fall below 10% for extended periods of time as this may permanently diminish the battery capacity. Recharge the battery by attaching the power cable to the terminal and plugging the power pack into a wall outlet.

Battery Behavior (No Power Cable)

If you connect the V^x680 to a non-battery power source, the terminal shifts to cabled power mode and starts up automatically, regardless of the battery charge state.

Manual Startup

Hold the green key down for about 4 seconds until the terminal displays the startup screen.

> **NOTE**
>
> The 4-second power-up delay is for preventing terminal startup if the green key is accidentally held down. The time required to hold the green key down to power up the terminal is configurable (for more information, see the V^x680 Reference Manual – VPN DOC268-004-EN-A).

When the terminal has power, the terminal lights are activated and the green LED indicator remains lit.

> **NOTE**
>
> If an application is loaded in the terminal, it starts after the initial VeriFone copyright screen and usually displays a unique copyright screen. If no application is loaded in the terminal, **DOWNLOAD NEEDED** appears on screen after the initial VeriFone copyright screen.

Manual Shutdown

Hold the red key down for about 4 seconds until the terminal displays the shutdown verification screen. Keep holding the red key until the V^x680 terminal shuts down.

> **NOTE**
>
> • The 4-second shutdown delay is for preventing terminal shutdown if the red key is accidentally held down. The time required to hold the red key down to shut down the terminal is configurable (for more information, see the V^x680 Reference Manual – VPN DOC268-004-EN-A).
>
> • When the terminal has no power, the screen is blank and the green LED indicator is not lit.

Installing the Smart Battery

The Vˣ680 smart battery fits in a slot on the back of the Vˣ680 terminal, as shown in Figure 21. The locking tab clicks when the battery is in place. The slot is *keyed*, so that there is only one way to insert the battery.
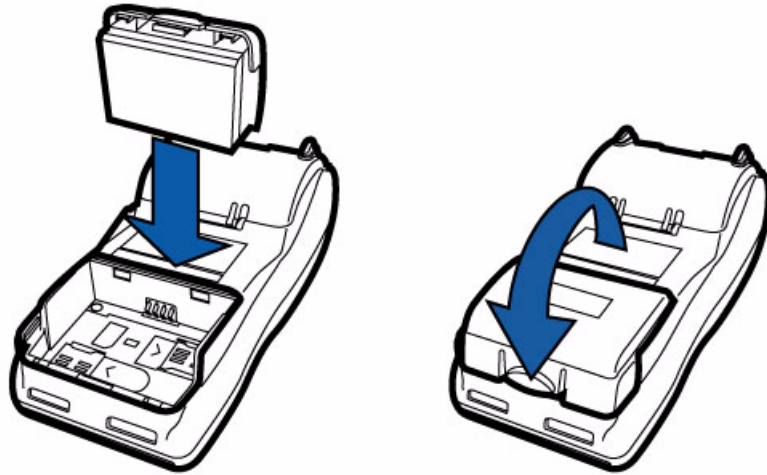

Figure 21   Installing the Smart Battery

Removal

To remove the Vˣ680 smart battery, press the locking tab and pull the smart battery from its slot.
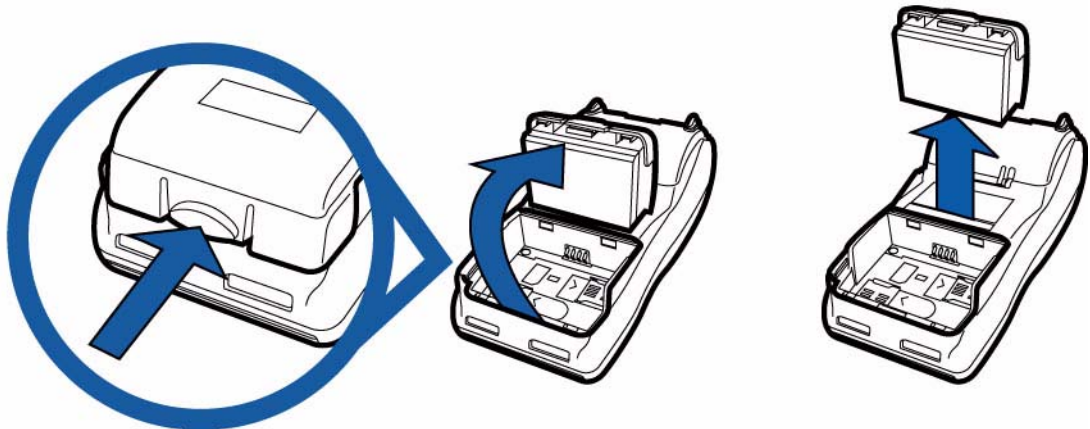

Figure 22   Detaching the Smart Battery from the Vˣ680 Terminal

Connecting the Terminal Power Pack

When you have finished installing the smart battery, you are ready to connect the Vˣ680 terminal to the provided power source for initial charging.

CAUTION	Using an incorrectly rated power supply may damage the terminal or cause it not to work as specified. Before troubleshooting, ensure that the power supply being used to power the terminal matches the requirements specified on the bottom of the terminal. (See Chapter 3,Specifications for detailed power supply specifications.) Obtain the appropriately rated power supply before continuing with troubleshooting.

The Vˣ680 unit comes with a universal input power pack capable of operating from voltages of 100VAC to 240VAC.

To Connect the Terminal Power Pack

1 Insert the round barrel connector into the power port in the connector, as shown in Figure 23.
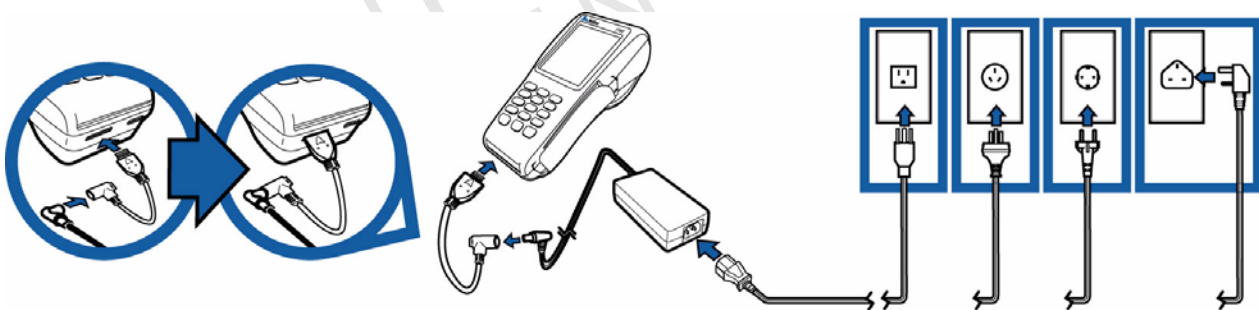
Figure 23   Vˣ680 Power Pack Connection

2 Insert the AC power cable into the power pack.

3 Plug the AC power cable into a wall outlet or powered surge protector.

WARNING	Do not plug the power pack into an outdoor outlet or operate the terminal outdoors. During a transaction, disconnecting the power by removing the battery or unplugging the terminal from a wall power while at very low battery charge may cause transaction data files not yet stored in the terminal memory to be lost.

NOTE	To protect against possible damage caused by lightning strikes and electrical surges, consider installing a power surge protector.

When the terminal has power, the terminal lights are activated and the LED indicator remains lit.

If an application is loaded in the terminal, it starts after the initial VeriFone copyright screen and usually displays a unique copyright screen. If no application is loaded in the terminal, **DOWNLOAD NEEDED** appears on screen after the initial VeriFone copyright screen.

Charging the Smart Battery

After unpacking your Vˣ680 terminal, install the battery and connect the power pack to the unit for 6 hours or until fully charged.

NOTE	The Vˣ680 terminal's smart battery is also charged when the terminal is in the Base Station. For more information, see Placing the Terminal Onto the Base Station.

The smart battery has a safety circuit to protect the Li-ion cells from overcharging and over-discharging. If the battery is over-discharged, the safety circuit shuts down the battery. The battery must then be recharged to restore operation.

NOTE	The Vˣ680 terminal automatically shuts off when the smart battery reaches the *critically low* charge state. If this occurs, the smart battery must be recharged for a minimum of 1/2 hour before it can power the terminal. *It may take several recharge attempts to reset the safety circuit* when charging a smart battery that has been discharged below this critical state.

Battery Life

The Vˣ680 smart battery can be charged and discharged hundreds of times, but will eventually wear out. When operating times are noticeably shorter than usual, it is time to buy a new battery (see Accessories and Documentation for ordering information).

WARNING	Do not dispose of batteries in a fire. Li-ion batteries must be recycled or disposed of properly. Do not dispose of Li-ion batteries in municipal waste sites.

Using the Base Station

The primary purpose of the Base Station is to charge the terminal battery and provide a docking station for the terminal after being used in pay-at-table environments. The Base Station can be positioned on a countertop or mounted to the wall.

There are two types of Base Stations, the standard model and the full-feature model.

Standard Base Station

The standard Base Station can charge the V^x680 terminal. However, it does not have any external ports and has a single LCD to indicate power status.
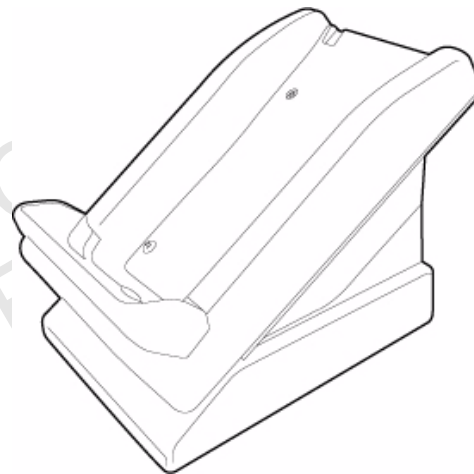

Figure 24   The V^x680 Standard Base Station

Full-Feature Base Station

The full-feature Base Station can charge the V^x680 terminal while charging an extra battery pack. In addition, it has two USB ports for external dongles, together with one LED for power indication and another LED for the charger status.
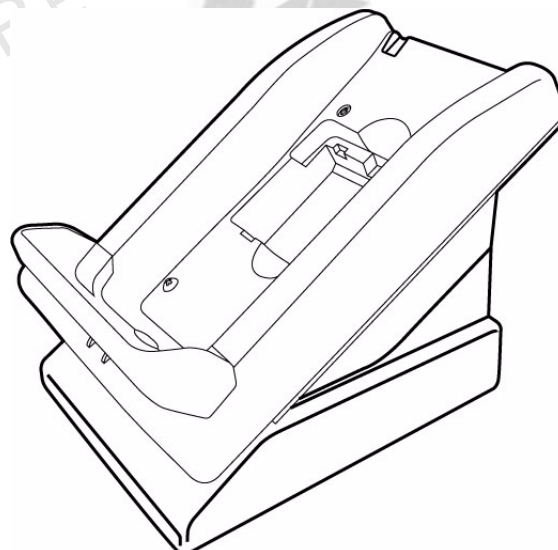

Figure 25   The V^x680 Full-Feature Base Station

For more information on charging the spare battery on the full-feature Base Station and connecting external dongles to the USB ports, see Charging the Spare Battery on the Base Station and Attaching the USB Dongles to the Base Station.

Powering Up the Base Station

Use the procedure in this section to connect the Vˣ680 Base Station to a power source.

1 Insert the round barrel connector of the power pack into the power port at the back of the Base Station.
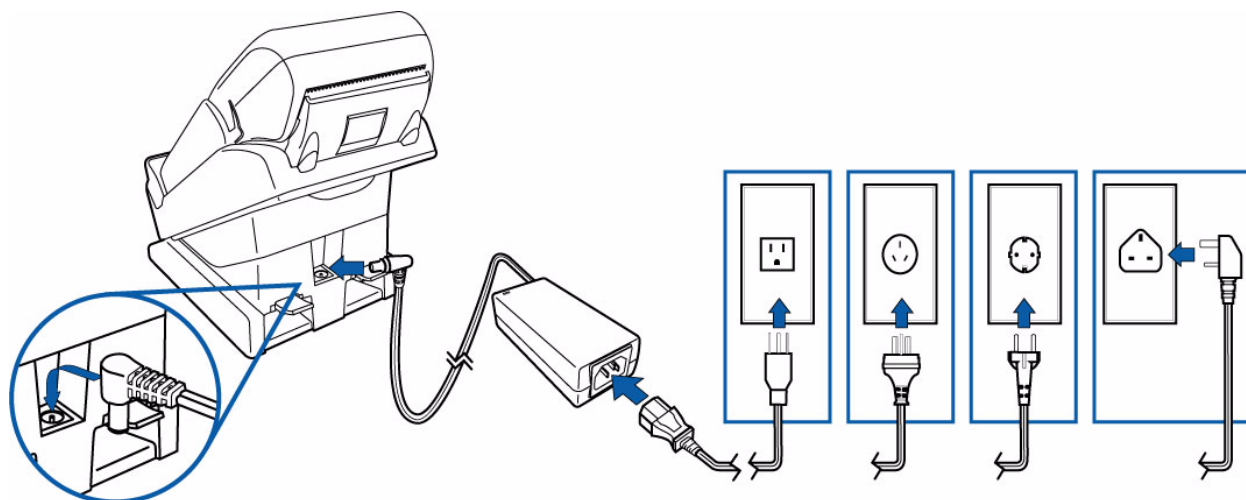

Figure 26   Connecting the Base Station to a Power Source

2 Insert the AC power cable into the power pack.

3 Plug the AC power cable into a wall outlet or power surge protector.

4 Confirm that the Base Station is powered up as indicated by the solid green LED.

Placing the Terminal Onto the Base Station

The V^x680 terminal can be placed on the Base Station when not in use for continuous charging of its battery. External peripherals can also be attached to the terminal via USB dongles while it is on the Base Station (see Attaching the USB Dongles to the Base Station).
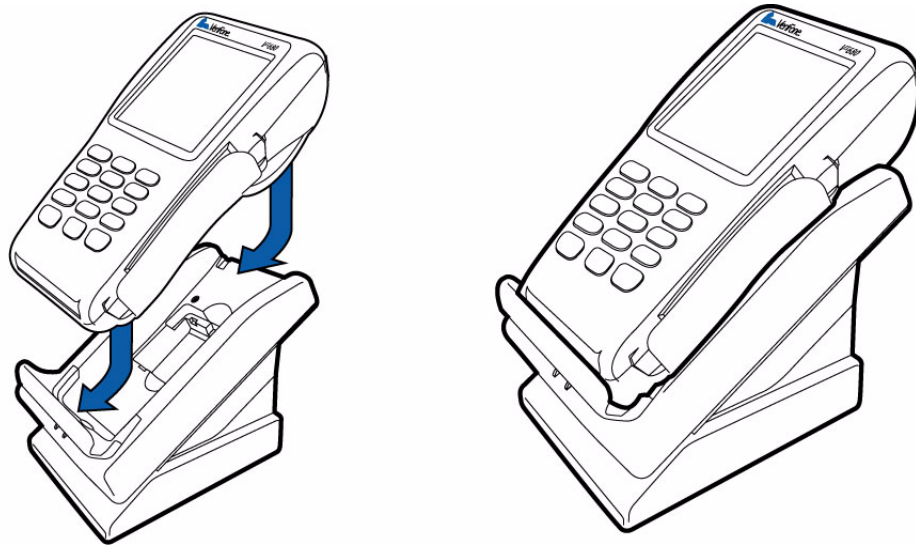

Figure 27   Placing the V^x680 terminal onto the Base Station

NOTE

The full-feature Base Station can also charge a spare battery while it charges the battery attached to the terminal (see Charging the Spare Battery on the Base Station).

To protect against possible damage caused by lightning strikes and electrical surges, consider installing a power surge protector.

WARNING

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

Disconnecting the power during a transaction may cause transaction data files not yet stored in terminal memory to be lost.

Attaching the USB Dongles to the Base Station

While the V^x680 terminal is resting on the Base Station, you can drive external peripherals through the use of USB dongles. Only one Modem Dongle and one Serial Dongle can be connected to the Base Station. A second Modem Dongle or a second Serial Dongle will be ignored by the terminal.

NOTE

The full-feature Base Station has USB ports for two external dongles. The standard Base Station does not have USB ports.

1 Insert the USB dongle into the USB port located at the back of the Base Station.
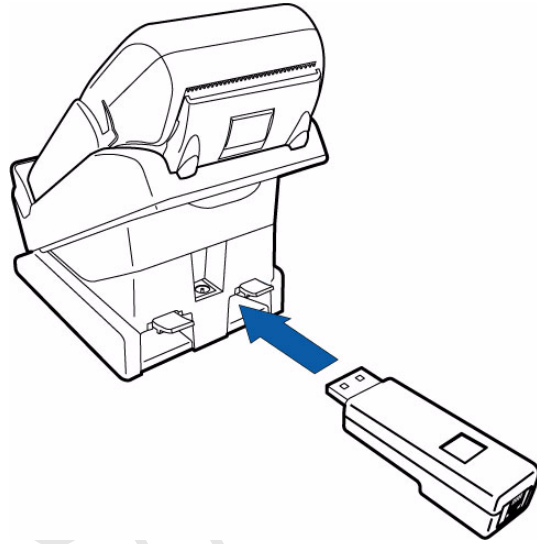

Figure 28 Inserting External Dongle Into USB Port

2 After inserting the external dongle into the USB port, place the Vˣ680 terminal onto the Base Station (see Powering Up the Base Station).

3 Connect the peripheral to the external dongle.

Charging the Spare Battery on the Base Station

The full-feature Base Station can charge the Vˣ680 terminal while charging an extra battery pack.

1 Connect the Base Station to a power source (see Powering Up the Base Station)

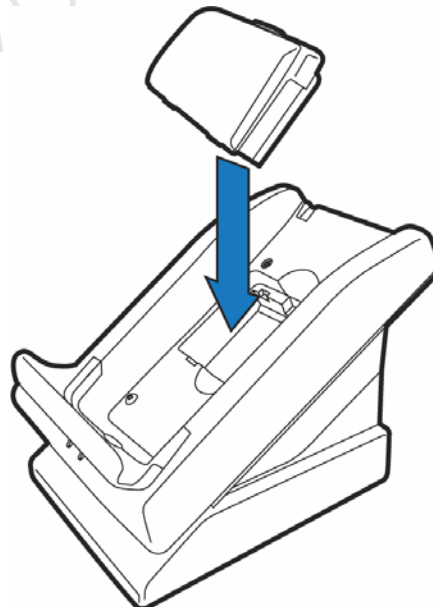**2** Place the spare battery pack onto the Base Station as shown in Figure 29.

Figure 29 Putting Spare Battery Pack Into the Base Station

3 Place the V^x680 terminal onto the Base Station to charge both the spare and installed battery packs at the same time.
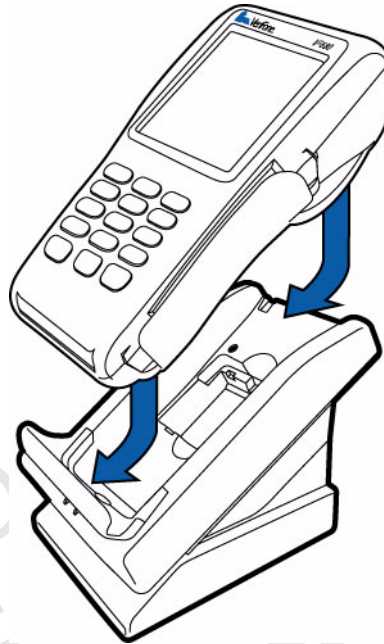
Figure 30   Charging the Spare and Installed Battery Simultaneously

Conducting Wireless Transactions

To conduct a wireless transaction:

- Ensure the terminal is in an optimal position for transmitting.
- Follow the on-screen instructions provided with your application.

Conducting Smart Card Transactions

The smart card transaction procedure may vary from one application to another. Verify the procedure with your application provider before performing a smart card transaction.

To Conduct a Smart Card Transaction

1 Position a smart card with the contacts facing upward (see Figure 31).

2 Insert the smart card into the smart card reader slot in a smooth, continuous motion until it seats firmly.

3 Remove the card only when the application indicates the transaction is complete.
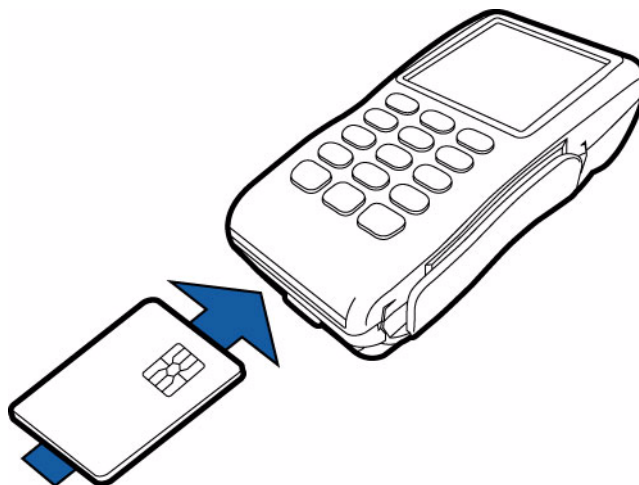
Figure 31   Inserting a Smart Card

CAUTION

Leave the smart card in the card reader until the transaction is complete. Premature card removal will invalidate the transaction.

Using the Magnetic Card Reader

The Vˣ680 terminal supports credit/debit card transactions.

To Conduct a Credit/ Debit Card Transaction

1 Position a magnetic card with the stripe in the card reader and facing inward, toward the keypad.

2 To ensure a proper read of the magnetic swipe card, the user should insert the magnetic card from the top of the unit, as shown in Figure 32.

3 Swipe the card through the magnetic card reader.
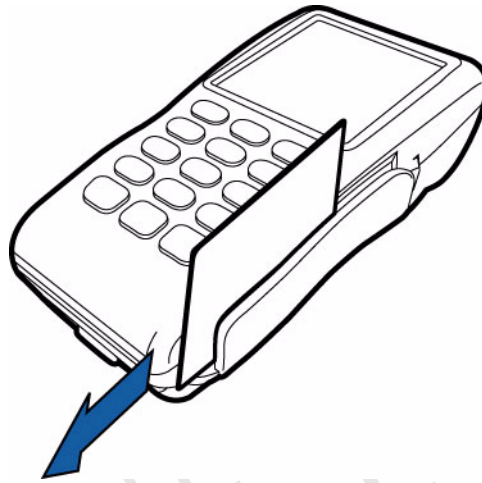
Figure 32 **Using the Magnetic Card Reader**

Specifications

This chapter discusses power requirements, dimensions, and other specifications of the V^x680 terminal.

Power

12V DC 2.0 A

DC Power Pack

UL, ITE listed, LPS power supply:

 a Input rated: 100 - 240V AC, 50/60 Hz

 b Output rated: 12V DC 2.0 A

Barrel connector polarity:

Temperature

- Operating temperature: -10° to 50° C (14° to 122° F)
- Relative humidity: 5% to 90%; non-condensing

External Dimensions

- Length: 168 mm (6.6 in)
- Width: 82 mm (3.2 in)
- Depth: 58 mm (2.3 in)

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Maintenance

The Vˣ680 terminal and base stations have no user-maintainable parts.

Cleaning the Terminal

To clean the terminal and base station, 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.

CAUTION

Never use thinner, trichloroethylene, or ketone-based solvents – they may cause deterioration of plastic or rubber parts.

Do not spray cleaners or other solutions directly onto the keypad or terminal display.

Terminal Contacts

Gently swab the contacts with alcohol or contact cleaner to remove the dirt. It is important that the exposed contacts of the Vˣ680 battery stay clean and unbent.

CAUTION

Avoid touching the contacts of the Vˣ680 battery and the recessed area on the terminal. Finger oils tarnish contacts, causing bad connections. When operating on battery power and experiencing a high occurrence of bad or incomplete data transfers, clean the contacts.

Smart Card Reader

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

VeriFone Service and Support

For V×680 terminal problems, contact your local VeriFone representative or service provider.

For V×680 product service and repair information:

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

Returning a Terminal or Smart Battery for Service

Before returning a V×680 terminal, smart battery, or base station to VeriFone, you must obtain an MRA number. The following procedure describes how to return one or more V×680 terminals, smart batteries, or base stations for repair or replacement (U.S. customers only).

> **NOTE**
>
> Customers outside the United States are advised to contact their local VeriFone representative for assistance regarding service, return, or replacement of terminals or batteries.

To Return a Terminal for Service

1   Get the following information from the printed labels on the bottom of *each* V×680 terminal, smart battery, or sled module to be returned:

- Product ID, including the model and part number. For example, "V×680" and "M268-XXX-XXX-xxx."
- Serial number (S/N nnn-nnn-nnn)

2   Obtain the MRA number(s) by completing one of the following:

a   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.–8 P.M., Eastern Time.
- Give the MRA representative the information you 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 727-953-4172 (U.S.).

b   Address a fax to "VeriFone MRA Dept." with the model and part number(s)

- Include a telephone number where you can be reached and your fax number.

    c Complete the Inquiry Contact Form at http://www.verifone.com/aboutus/contact/contact_form.cfm.

- Address the Subject box with to "VeriFone MRA Dept."

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

NOTE

One MRA number must be issued for each V^{x}680 terminal you return to VeriFone, even if you are returning several of the same model.

---

3 Describe the problem(s).

4 Provide the shipping address where the repaired or replacement unit must be returned.

5 Keep a record of the following items:

- Assigned MRA number(s).

- VeriFone serial number assigned to the V^{x}680 terminal, smart battery, or base station you are returning for service or repair (terminal serial numbers are located on the bottom of the unit.

- Shipping documentation, such as air bill numbers used to trace the shipment.

- Model(s) returned (model numbers are located on the VeriFone label on the bottom of the V^{x}680 terminal).

Accessories and Documentation

VeriFone produces the following accessories and documentation for the V^{x}680 terminal. 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, 800-VeriFone (837-4366), Monday - Friday, 7 A.M. - 8 P.M., Eastern time

- International – Contact your VeriFone representative

Power Pack

Contact your local VeriFone distributor to determine which power pack or power cable fits your needs.

CPS11224-3B-R	DC power pack (universal)
21973-01	AC power cable (US)

Thermal Printer Paper

CRM0047-20	Thermal paper in 20-roll bulk package

VeriFone Cleaning Kit

02746-01	Cleaning Kit

Spare Battery

24016-01-R	V^{x}680 spare battery

USB Host Cable	08640-01-R	V^{x}680 USB Host Cable
Modem Dongle	24123-01-R	V^{x}680 Modem Dongle
Serial Dongle	24122-01-R	V^{x}680 Serial Dongle
Telephone Line Cable	00124-17	2.1-meter (7-foot) telephone line cable, black, with modular RJ11-type connectors

Documentation

V^{x}680 Certifications and Regulations Sheet	VPN DOC268-001-EN-A
V^{x}680 Quick Installation Guide	VPN DOC268-002-EN-A
V^{x}680 Reference Manual	VPN DOC268-004-EN-A
V^{x}680 Full-Featured Base and Dongle Quick Installation Guide	VPN DOC268-006-EN-A
V^{x}680 Standard Base Quick Installation Guide	VPN DOC268-005-EN-A
Verix EOS Volume I: Operating System Programmers Manual	VPN DOC00301
Verix EOS Volume II: Operating System and Communication Programmers Manual	VPN DOC00302
Verix EOS Volume III: Operating System Programming Tools Reference Manual	VPN DOC00303

Troubleshooting Guidelines

The troubleshooting guidelines provided in the following section are included to help you install and configure your Vˣ680 terminal successfully. Typical examples of malfunction you may encounter while operating your Vˣ680 terminal and steps you can take to resolve them are listed in this chapter.

If the problem persists even after performing the outlined guidelines or if the problem is not described below, contact your local VeriFone representative for assistance.

NOTE

The Vˣ680 terminal comes equipped with tamper-evident labels. The Vˣ680 unit contains no user serviceable parts. Do not, under any circumstance, attempt to disassemble the terminal. 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.

CAUTION

Use only a VeriFone-supplied power pack. Using an incorrectly rated power supply may damage the terminal or cause it not to work as specified. Before troubleshooting, ensure that the power supply being used to power the terminal matches the requirements specified on the bottom of the terminal. (See Chapter 3, Specifications, for detailed power supply specifications.) Obtain the appropriately rated power supply before continuing with troubleshooting.

Terminal Does Not Start

- Ensure that the smart battery charge state is not below the critically low level.
- Recharge or replace the smart battery.
- Ensure that you pressed the green ENTER/ON key for approximately 4 seconds, until the unit lights up.

Terminal Display Does not Show Correct/ Readable Info

- Recharge or replace the battery.
- Connect the Vˣ680 terminal into a known-good power supply (if you have one) to see if this clears the problem.
- If the problem persists, contact your local VeriFone representative for assistance.

Smart Battery Will Not Charge

The Vˣ680 smart battery must initially receive a full charge to ensure proper operation.

NOTE

- Allow the Vˣ680 terminal to remain connected to the power pack for 6 hours to ensure the battery receives a full charge.

- Lithium-ion batteries are not affected by shallow charging. Furthermore, when the terminal has no external power source or battery the coin cell battery provides power to the security circuit.

- Uninstalling the battery and unplugging the terminal power pack reduce the life of the coin cell battery, which does not recharge and must be replaced if drained.

- Conserve battery power by turning the Vˣ680 terminal off when not in use. If the terminal will not be used for an extended period of time, keep the Lithium-ion battery inserted in the terminal, and power up the terminal periodically to check the battery charge. Do not let the battery charge fall below 10% for extended periods of time as this may permanently diminish the battery capacity. Recharge the battery by attaching the power cable to the terminal and plugging the power pack into a wall outlet.

- The Vˣ680 terminal automatically shuts off when the smart battery reaches the *critically low* charge state. If this occurs, the smart battery must recharge a minimum of 1/2 hour before it can power the terminal. *It may take several recharge attempts to reset the safety circuit* when charging a smart battery that has been discharged below this critical state.

Spare Battery in Base Station Will Not Charge

When the spare battery is installed in the base for charging, the Base LED will flash amber if the battery is charging, or stay solid green if the battery is fully charged. If the battery is not charged and the LED does not flash amber, check the contacts on the battery and in the terminal base to make sure they are clean. Also, try charging a known good battery to see if the problem is with the base or with the battery. If the problem persists, contact your local VeriFone representative.

Blank Display

When the Vˣ680 terminal display screen does not show correct or clearly readable information:

• The battery pack may not be connected properly. Remove and reinstall the battery pack.

• Check terminal power connection.

• Remove and reapply power to the terminal.

• If the problem persists, contact your local VeriFone service provider.

Terminal Does Not Dial Out

If the terminal does not dial out:

• Check the telephone line connections.

• Check that the telephone line is working by plugging it into a working telephone and listening for a dial tone.

• Replace the telephone cable that connects the terminal with a cable you know is working correctly.

• If the problem persists, contact your local VeriFone service provider.

Printer Does Not Print

If the printer does not work properly:

• Make sure the battery is properly installed in the terminal. The printer will not print if there is no battery in the terminal.

• Check battery status or terminal power connection. The printer will not print if there is an insufficient charge remaining in the battery to complete the print operation.

• Check if the printer is out of paper (slow red blinking light) and that the roll is properly installed. Open the paper roll cover and install a new roll of printer paper or ensure that the roll is feeding correctly. A solid red indicator light indicates a printer error.

• Verify that the printer door is properly latched.

• If the problem persists, contact your VeriFone distributor or service provider.

Printer Paper Jam

If paper jams inside the printer:

• Press the button at the bottom of the terminal to unlatch the paper roll cover, then open the cover.

• Remove the damaged paper from the paper roll and clear the feed mechanism.

• Install a roll of printer paper, as described in Installing the Paper Roll.

• If the problem persists, it may be due to poor paper quality. Install a new roll of higher-quality paper.

> **WARNING**
>
> Poor-quality paper may jam the printer. To order high-quality VeriFone paper, refer to Accessories and Documentation.

Keypad Does Not Respond

If the keypad does not respond properly:

• Check the terminal 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.

• If pressing a function key does not perform the expected action, refer to the user documentation for that application to ensure you are entering data correctly.

• If the problem persists, contact your local VeriFone representative.

Transactions Fail To Process

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

Check the 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. With the V^{x}680 card reader, the black magnetic stripe on the card should face down and inward, toward the keypad and must be inserted from the top of the terminal (see Figure 32).

• 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.

• Contact your VeriFone distributor or service provider.

• If the manual transaction does not work, proceed to Check the Telephone Line.

Check the 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 and that the card is not removed prematurely.

• Ensure the MSAM cards are properly inserted in the cardholders and that the cardholders are properly secured (see Installing/Replacing MSAM Cards).

• Contact your VeriFone distributor or service provider.

• If the manual transaction does not process, proceed to Check the Telephone Line.

Check the Telephone Line

- Disconnect the telephone line from the V^{x}680 terminal and connect it to a working telephone to check for a dial tone. If there is no dial tone, replace the telephone cable.

- If the problem appears to be with the telephone line, check with the party you are trying to call to see if their system is operational. If they are not experiencing difficulties with their line, contact the telephone company and have your line checked.

- If the telephone line works, contact your local VeriFone representative for assistance.

DECLARATION OF CONFORMITY
according to ISO/IEC Guide 22 and EN 45014

Manufacturer's Name   VeriFone, Inc.

Manufacturer's Address   VeriFone, Inc.
                                           1400 West Stanford Ranch Road
                                           Suite 200, Rocklin, CA 95765, USA

Declares, that the product

Product Name: V×680
Model Number: M268-XXX-XX-XXX
Product Options: All

Conforms to the following product specifications:

Safety:	IEC 60950-1:2005
	EN 60950-1:2006+A11:2009
EMC:	EN 55022:2006+A1:2007
	EN 55024:1998/A1:2001/A2:2003
	EN 61000-3-2:2006
	EN 61000-3-3:1995+A1:2001+A2:2005
GSM:	EN301 489-1 V1.8.1
	EN301 489-7 V1.3.1
RFID:	EN 301 489-1 V 1.8.1
	EN 301 489-3 V 1.4.1 (2002-08)
	EN 300 330-1 V 1.5.1 (2006-04)
	EN 300 330-2 V 1.3.1 (2006-04)
RF Spectrum Efficiency:	EN 301 511, V 9.0.2
SAR:	EC Recommendation 1999/519/EC

Supplementary Information:

We hereby declare that the device complies with the requirements of the Low Voltage Directive 2006/95/EC, the EMC Directive 2004/108/EC, R&TTE Directive 1999/5/EC, and carries the CE Mark Directive (93/68/EEC) accordingly.

Dated: October 22, 2009

Fanny Wong
Director of Engineering, Program Management Office
Rocklin, CA, USA

European contact for regulatory topics only: VeriFone UK Ltd.
                                                    Symphony House
                                                    7 Cowley Business Park
                                                    High Street
                                                    Cowley Uxbridge, UB8 2AD
                                                    United Kingdom
                                                    Tel: +44-1895-275275

FCC Regulations:

●This mobile device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

●This mobile device has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiated radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.
-Increase the separation between the equipment and receiver.
-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

●The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

‣RF Exposure Information (SAR)

This device meets the government's requirements for exposure to radio waves.
This device is designed and manufactured not to exceed the emission limits for exposure to radio frequency (RF) energy set by the Federal Communications Commission of the U.S. Government.

The exposure standard for wireless mobile devices employs a unit of measurement known as the Specific Absorption Rate, or SAR.   The SAR limit set by the FCC is 1.6W/kg.   [*]Tests for SAR are conducted using standard operating positions accepted by the FCC with the device transmitting at its highest certified power level in all tested frequency bands. Although the SAR is determined at the highest certified power level, the actual SAR level of the device while operating can be well below the maximum value.   This is because the device is designed to operate at multiple power levels so as to use only the poser required to reach the network.   In general, the closer you are to a wireless base station antenna, the lower the power output.

The highest SAR value for the device as reported to the FCC when tested for use when worn on the body, as described in this user guide, is 0.468 W/kg.   (Body-worn measurements differ among device models, depending upon available accessories and FCC requirements.)

While there may be differences between the SAR levels of various devices and at various positions, they all meet the government requirement.

The FCC has granted an Equipment Authorization for this device with all reported SAR levels evaluated as in compliance with the FCC RF exposure guidelines.   SAR information on this device is on file with the FCC and can be found under the Display Grant section of www.fcc.gov/oet/ea/fccid/ after searching on FCC ID: B32VX680GPRS.

This device is compliance with SAR for general population /uncontrolled exposure limits in ANSI/IEEE C95.1-1999 and had been tested in accordance with the measurement methods and procedures specified in OET Bulletin 65 Supplement C.

CE Logo

C€ 0678

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V^x680

Installation Guide