

## Carbon 8

### *Installation Guide*

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## Carbon 8 Installation Guide

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This guide is the primary source of information for setting up and installing the Carbon 8.

**Audience**

This guide describes the card reader’s features, and provides the basic information for its installation and configuration.

**Organization**

This guide is organized as follows:

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

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

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

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

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

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

[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 card reader and controller device, refer to the following set of documents and their associated Verifone Part Numbers (VPNs).

<i>Carbon 8 Certifications and Regulations Sheet</i>	VPN DOC179-121-EN-x
<i>Carbon 8 Quick Installation Guide</i>	VPN DOC179-122-EN-x
<i>Carbon 8 Printer Module Quick Installation Guide</i>	VPN DOC179-132-EN-x
<i>Carbon 8 Printer Module Certs and Regulations Sheet</i>	VPN DOC179-125-EN-x

## 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 <a href="#">Conventions and Acronyms</a> .
	The pencil icon is used to highlight important information.	If exchanging cables, use a Verifone-approved cable.
	The caution symbol indicates possible hardware or software failure, or loss of data.	Using an incorrectly rated power supply can damage the unit or cause it to malfunction.
	The lightning symbol is used as a warning when bodily injury might occur.	For safety, do not string cables or cords across a walkway.

### 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
COM	Communications port
CTLS	Contactless
EMV	Europay, MasterCard, and Visa
ETH	Ethernet
HW	Hardware
I/O	Input/Output
ITP	Internal thermal printer
LCD	Liquid crystal display
LPS	Lines per second
MSAM	Micromodule-Size Secure Access Module
MSR	Magnetic-stripe card reader
PCI	Payment Card Industry
PIN	Personal Identification Number
POI	Point of Interaction

**Table 2**      **Acronym Definitions** (continued)

Acronym	Definitions
PTS	PIN Transaction Security
QVGA	Quarter Video Graphics Array
RJ45	Registered Jack 45 modular connector
SAM	Secure Access Module
SC	Smart card
SCR	Smart card reader
SD	Secure Digital
SDA	Static Data Authentication
SDHC	Secure Digital High Capacity
SIM	Subscriber Identity Module
SMA	SubMiniature version A connector
TFT	Thin-film transistor
TLS	Transport Layer Security
UI	User interface
USB	Universal Serial Bus

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## Device Overview

This chapter provides a brief description of the Carbon 8 system, a modular merchant- and consumer-facing device, enabling use as a handheld or stand-mounted payment solution.

### Features and Benefits

Carbon 8 provides magnetic-stripe card reader (MSR), smart card (SC) and contactless (CTLS) payment processing with a 5-inch (12.7 cm) color TFT capacitive touch panel LCD screen integrated with an 8 inch (20.3 cm) tablet. The Stand provides additional expansion options (such as a bar code scanner and weighing scale), connectivity features (USB, Ethernet and Cash Drawer), and power charging. A removable printer module contains an embedded internal thermal printer (ITP).

#### NOTE



Verifone ships variants of the Carbon 8 system for different markets. Your device may have different features described in this section.

### Device Connectivity

- 1 micro SD slot
- 1 micro USB 2.0 OTG (can be used for charging)
- 1 audio jack
- Service ports

### Stand Connectivity

- 4 USB 2.0 Host ports
- 1 Ethernet RJ45
- 1 Mod 12 (cash drawer)
- Power
- Service port (Service use only)

#### NOTE



You can find the Carbon 8 service ports on the lower right area behind the 5-inch screen. The Stand ports are accessible from the underside of the unit, while the tablet ports and slots are on the sides of the lower right corner.

### Performance

- Consumer Display:
  - 512 MB SDRAM and 512 MB Flash memory
  - 5-inch color TFT display capacitive touch panel LCD (854 x 480)
  - Software-controlled backlight

- Integrated speaker
- Merchant Tablet:
  - 1 GB SDRAM and 16 GB Flash for System
  - 8-inch color TFT display capacitive touch panel LCD (1280 x 800)
  - Provides power and data to the Carbon 8 unit
  - Barcode scanning enabled for front and rear cameras
  - Wi-Fi and Bluetooth enabled
  - Integrated speakers
- Stand:
  - USB 2.0 high-speed connections
  - Bluetooth enabled
  - Provides ETH and Wi-Fi to connectivity to broadband router
  - Cash Drawer interface
- Printer Module:
  - Integrated 80mm Thermal Printer with Auto cutter

### Security

- PCI PTS POI v4.x approved for debit and other PIN-based transactions
- EMV L1 Type Approval (contact and contactless)
- Tamper-resistant construction, TLS protocols, and VeriShield file authentication
- Supports VeriShield Protect encryption implementations.

### Exceptional Ease of Use

- Capacitive touch-screen UI access for merchant and customer.
- Signature capture screen capability.
- The contactless (CTLS) functionality offers a convenient payment option for consumers.
- The triple-track, high-coercivity card reader handles most magnetic stripe cards.
- EMV card reader ensures secure payment option.
- Large (5-inch for customers, 8-inch for merchants) LCD displays simplify training and reduce help desk calls.
- The multiple font-capable optional thermal printer simplifies paper loading and reduces paper jams. Uses 80 mm wide x 80 mm diameter paper rolls, prints at 110 mm/sec.

### Modular Countertop Performance

- The 32-bit processing and multi-tasking capabilities ensures fast processing of payment, payment-related, and value-added applications.

- Exceptional displays and optional printer graphics-handling capabilities that quickly render logos, graphical fonts, and character-based languages.
- The Carbon 8 ensures uncompromising reliability from Verifone, the worldwide leader in e-payment.

#### True Multi-Application Capability

- The Carbon 8 offers 512 MB flash and 512 MB of dynamic memory allocation for the consumer terminal and 1GB of SDRAM, 16GB of Flash for System for the merchant tablet, which supports multiple applications on each side.
- The primary smart card reader and the MSAMs safeguard sensitive financial data and support multiple smart card schemes.
- Carbon 8 units are certified for ISO 7816-1 and ISO 7816-2 standards for smart card solutions, as well as ISO 14443 type A & B and ISO 18092 standards for CTLS operations.
- The VeriShield security architecture meets published specifications for PCI PTS POI and provides sophisticated file authentication to prevent execution of unauthorized software on Carbon 8 devices.

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## CHAPTER 2

### Setup

This chapter describes the setup procedures for the Carbon 8, under the following sections:

- [Selecting Unit Location](#)
- [Unpacking the Shipping Carton](#)
- [Examining the Unit's Features](#)
- [Establishing Communication](#)
- [Loading a Paper Roll in the Printer](#)
- [Installing or Replacing MSAM Cards](#)
- [Connecting Optional Devices](#)
- [Connecting the Power Pack](#)
- [Using the Smart Card Reader](#)
- [Using the Magnetic Card Reader](#)
- [Using the Contactless Reader](#)

#### Selecting Unit Location

Use the following guidelines when selecting a location for your device.

##### Ease of Use

- Select a location convenient for both merchant and cardholder.
- Select a flat support surface, such as a countertop or table.
- Select a location near a power outlet and a network connection.
- For safety, do not string the power cord or other cables in a walkway or place it across a walkway on the floor.

## Environmental Factors

- The unit must be used in an attended environment.
- Do not use the terminal 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 motor.
- Do not use the unit outdoors.

## CAUTION



The Carbon 8 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 the Carbon 8 during electrical storms.
- Place the device 10 cm away from metallic objects to avoid interference with the CTLS field.
- 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.

## PIN Protection Measures

You can employ several techniques for effective PIN entry screening on the keypad. Use the following methods in combination or singly, as necessary:

- Position the Carbon 8 on the stand in such a way as to make visual observation of the PIN entry process infeasible. Examples include:
  - Visual shields designed into the check-stand. These shields may be solely for shielding purposes, or may be part of the general check-stand design.
  - Position the Carbon 8 so that it is angled in such a way that PIN spying is difficult.
- Position the in-store security cameras so that PIN entry is not visible.
- Use signage to limit the view of the Carbon 8 to just that of the cardholder.
- Offer PIN security literature at the point of sale.

## Unpacking the Shipping Carton

Open the shipping carton and carefully inspect its contents for possible tampering or shipping damage. The Carbon 8 is a secure product and any tampering may cause the device to cease to function properly.

### To unpack the shipping carton

- 1 Validate the authenticity of the sender by verifying the shipping tracking number and other information located on the product order paperwork.

## 2 Remove and inspect the following items:

- Carbon 8 device
- Stand
- Printer
- Power pack
- Ethernet cable
- Paper roll

Refer to [Accessories and Documentation](#) for more information about the device's related accessories.



Verifone ships variants of the Carbon 8 for different markets. Your unit may have different options or accessories described in this section.

## 3 Remove all plastic wrapping from the terminal and other components.

## 4 Remove the clear protective film from the displays.

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



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

## Periodic Inspection

Periodically inspect the Carbon 8 terminal for possible tampering. Signs of tampering include:

- Wires protruding out of the device.
- Foreign objects inserted into the smart card slot or magnetic stripe slot.
- Signs of damage to the tamper-evident labels.
- A Tamper Warning message on the device displays.

If any device is found in tamper state, please remove it from service immediately, keep it available for potential forensics investigation, and notify your company security officer and your local Verifone representative or service provider. For contacting Verifone, please see "[Service and Support](#)".

Examining the Unit's Features

Before you continue the installation process, review the features of the device (see [Figure 1](#), [Figure 2](#), and [Figure 3](#)).

The following illustration shows the Carbon 8 payment components, as well as the tablet memory expansion and other features.

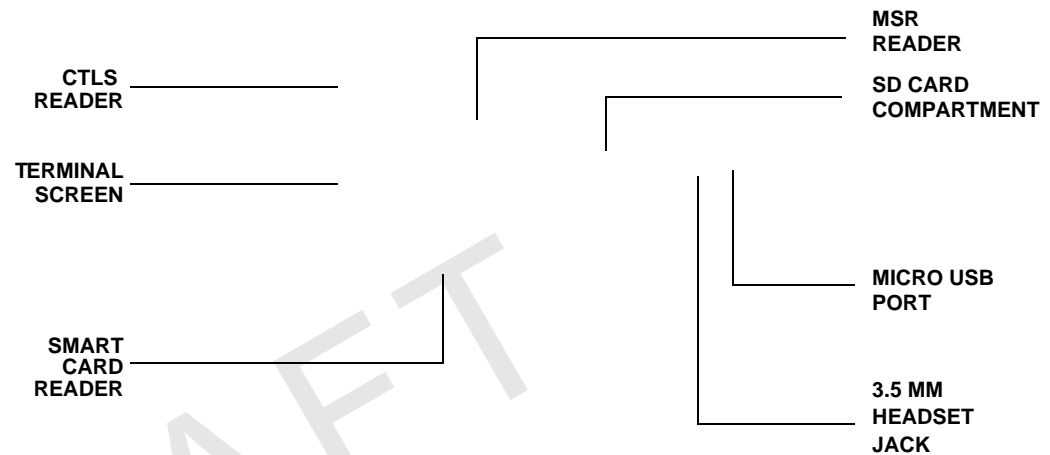


Figure 1 Carbon 8 Terminal Customer View

The following illustration shows the Carbon 8 tablet features.

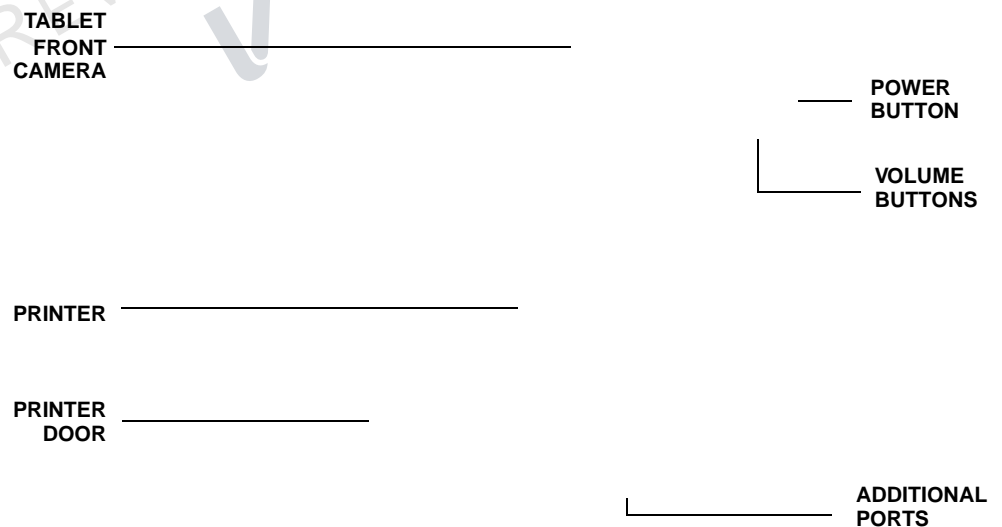
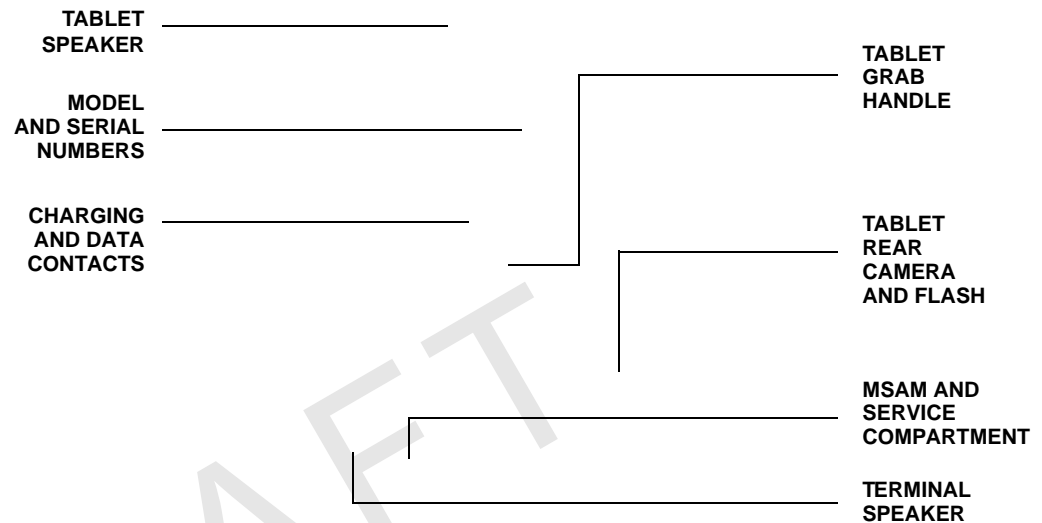


Figure 2 Carbon 8 Merchant Tablet View



The following illustration shows the Carbon 8 rear components, featuring the charging and data contacts, speakers, camera, as well as the MSAM and USB compartment.



**Figure 3 Carbon 8 Rear Features**

### Verifone Carbon Features

The Carbon 8 presents the following:

- A touchscreen LCD Consumer Display. The upper left edge of the Consumer Display acts as the tapping area for contactless transactions.
- A magnetic card reader, built into the top right edge of the Consumer Display. The arrows indicate swipe direction.
- A smart card reader built into the right side of the Consumer Display.
- 8-inch Merchant Tablet display
- Stand
- Printer module
- Printer indicator LED

### Connection Ports

Turn the Stand upside down to view the connection ports. The ports provide communications, peripheral device connections, and power supply.

Figure 4 shows the power, communications and connection ports for the Carbon 8 Stand.

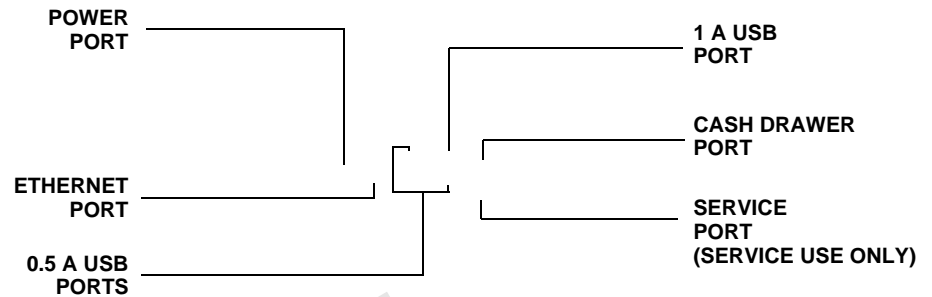


Figure 4 Power and Communication Ports

**WARNING**



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

## Establishing Communication

You can connect the Carbon 8 Stand to your network using an ethernet cable. You can also connect using the Wi-Fi option.

### Connecting by Ethernet Cable

Connect the ethernet cable to the ETH port on the stand, then route it directly to a network jack (see Figure 5). This is a direct connection to your network.

Figure 5 Ethernet Connection

### Connecting by Wi-Fi

Connect to Wi-Fi by enabling Wi-Fi connectivity on the Tablet or Stand. Select this option from the Network Settings on the Merchant Tablet.

## Loading a Paper Roll in the Printer

Before you can process transactions that require a receipt, you must install paper in the printer.

The Carbon 8 Printer Module uses a roll of 80 mm x 80 mm, single-ply, thermal-sensitive paper.

A pink out-of-paper indicator line appears on the edge of the paper before the end of the roll. After this line appears, there is enough paper remaining on the roll to conclude at least one more transaction.

### NOTE



When the LED by the printer door blinks amber, this indicates the printer is out of paper.

### 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.

- To install a paper roll**
- 1 Hold the Carbon 8 with one hand and slide the printer module off the base of the terminal. (see [Figure 6](#)).

### Figure 6 Removing the Printer Module

- 2 Remove any partial roll of paper in the tray.
- 3 Loosen the glued leading edge of the new paper roll or remove the protective strip. Unwind the paper roll past any glue residue.
- 4 Hold the roll so the paper feeds from the *top* of the roll.

- 5 Gently drop the paper roll into the printer tray.

#### **Figure 7 Loading Paper Roll**

- 6 Pull the paper past the printer door (see [Figure 8](#)).

#### **Figure 8 Pulling Paper Through Before Closing Door**

- 7 Align the printer paper to the tabs to the paper guides and hold the paper up when closing the door.

#### **Figure 9 Aligning Printer Paper**

- 8 Close the printer door by swinging upward until the door clicks shut, allowing the printer paper to extend outside the printer door (see [Figure 10](#)).

**Figure 10**      **Closing Printer Door**

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- 9 Align printer module with the base of the Carbon 8 base and slide them together (see [Figure 10](#)).

**NOTE**



For paper ordering information, refer to [Accessories and Documentation](#).

## Installing or Replacing MSAM Cards

When you first receive your Carbon 8, you may need to install one or more MSAM cards, 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.

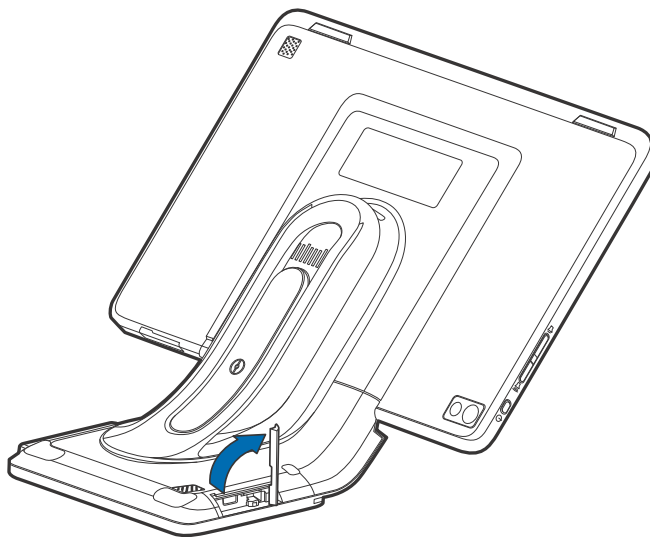
**NOTE**



Verifone ships variants of the Carbon 8 device for different markets. Your unit may have different features described in this section.

### To install or replace MSAMs

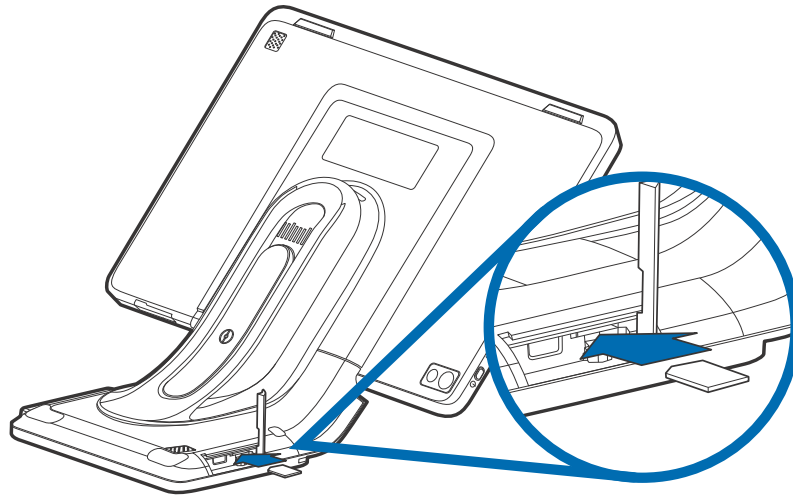
- 1 Power down the Carbon 8 unit.
- 2 Place the unit upside down on a soft, clean surface to protect the display from scratches.
- 3 Hook your finger on the latch and lift the cover to access the MSAM card slot (see [Figure 11](#)).



**Figure 11** Opening the MSAM Cover

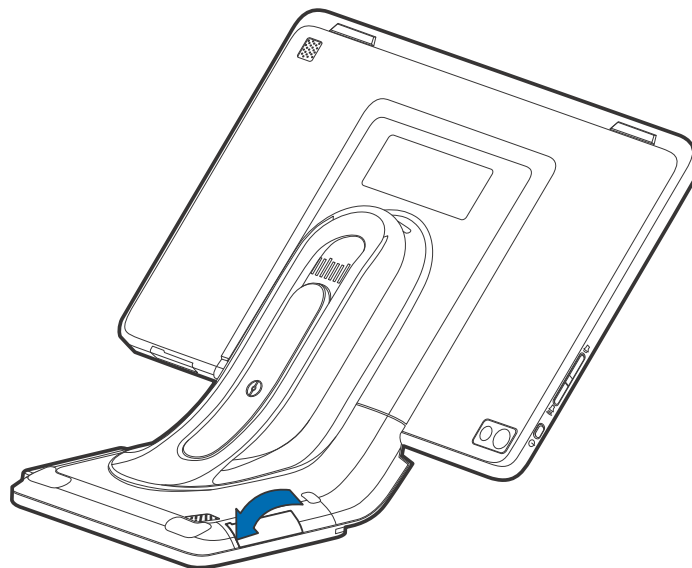
- 4 Remove any previously installed MSAM cards from the cardholder.

- 5 Install an MSAM card (with the contacts face down) by carefully sliding it into the slot until the card is fully inserted.



**Figure 12** Installing an MSAM Card

- 6 Swing the MSAM cover down to secure it in place.



**Figure 13** Closing MSAM Cover

## Connecting Optional Devices

The Carbon 8 device supports peripheral devices designed for use with electronic point-of-sale terminals.



Before connecting any peripheral device, power down the terminal and remove the power plug from the Stand. Reconnect the power plug only after you are finished connecting the peripheral device(s). For complete information about peripheral installation and use, refer to the user documentation supplied with those devices.

Different terminals support different devices, so for more information about optional devices, please contact your Verifone distributor.

## Optional Device Connections

You can connect several devices to your Carbon 8 using the ports on the underside of the Stand.

### NOTE



Tuck the cables under the Stand legs when all cables are installed. This provides some protection to the cables and connectors.

### CAUTION



Some devices (such as PIN pads) may require a separate power source. Before connecting to any device, remove the power cord from the Carbon 8 Stand.

Contact your Verifone representative or visit the online store at [www.store.verifone.com](http://www.store.verifone.com) for information on these devices.

## Connecting Cash Drawer to the Carbon 8

Use the dedicated port on the Carbon 8 Stand to attach a cash drawer.

The following illustration shows how to make a peripheral connection to a cash drawer (VPN MSC179-029-01-A) using the dedicated port and cable.

**Figure 14**      **Cash Drawer Connection**

## Connecting the Power Pack

After connecting optional peripherals, prepare to connect the Stand to your power source.

### CAUTION



Using an incorrectly rated power supply may damage the Carbon 8 and Stand. Before troubleshooting, ensure that the power supply being used matches the requirements specified on the bottom of the Stand. (See [Chapter 3, Technical Specifications](#), for detailed power supply specifications). Obtain the appropriately rated power supply before continuing with troubleshooting.



**NOTE**

Plugging in the Stand power pack to a power source automatically powers up the Carbon 8 terminal if the unit is mounted on the stand.

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**To connect the power pack**

- 1 Turn the Stand over to access the power port.
- 2 Insert the round barrel connector (see A in Figure 15) into the power port, then tuck the cable under the Stand leg nearest the power port.

**Figure 15 Power Connection**

- 3 Connect the power adapter to the power brick (see B in Figure 15).
- 4 Plug the AC power pack into a wall outlet or 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.

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

- 5 Place the Stand on a stable platform and mount the Carbon 8 unit on the stand.

#### Figure 16 Mounting Carbon 8 on Stand

- 6 If the Carbon 8 unit does not automatically power up, press the power button on the Merchant Tablet (see [Figure 2](#)).  
If the terminal comes pre-loaded with an application, this starts after the initial Verifone copyright screen, and usually displays its own copyright screen.
- 7 Log in using your merchant account on the Merchant Tablet.

### Using the Smart Card Reader

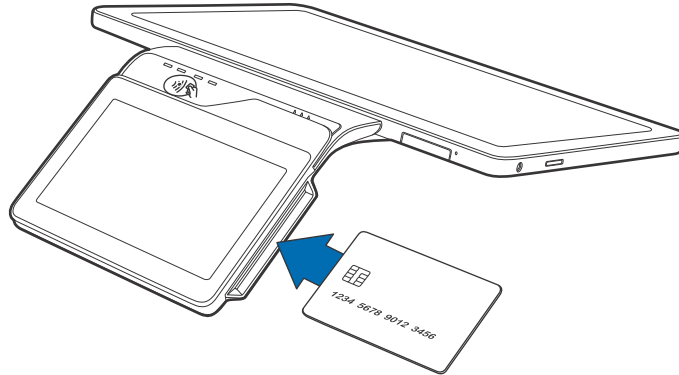
The Carbon 8 terminal supports Smart Card transactions. The smart card transaction procedure may vary from one application to another.

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 17](#)).
- 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 17 Inserting a Smart Card**

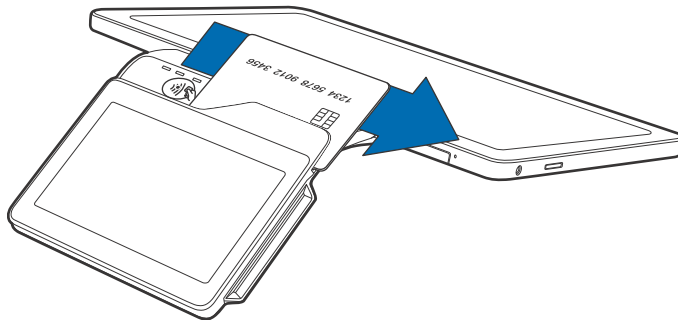


**CAUTION** Leave the smart card in the card reader until the transaction is complete. Wait for the prompt on the Consumer Display before removing the card. Premature card removal will invalidate the transaction.

## Using the Magnetic Card Reader

### To conduct a credit or debit card transaction

- 1 Position the card with the magnetic stripe oriented downward, facing the reader.
- 2 To ensure a proper read of the magnetic stripe, swipe the card smoothly through the reader in one direction (from left to the right), as shown in Figure 18.




**Figure 18 Using the Magnetic Card Reader**

- 3 Check the screen for confirmation of a successful transaction.

## Using the Contactless Reader

Carbon 8 provides a third alternative to paying for goods and services: CTLS payments. Use this option when customers opt for contactless payments using their cards or compatible devices.

### To perform a CTLS transaction

- 1 Hold the card or compatible device within 4 cm of the CTLS reader, or gently tap against the surface of the contactless antenna, marked by the  logo.

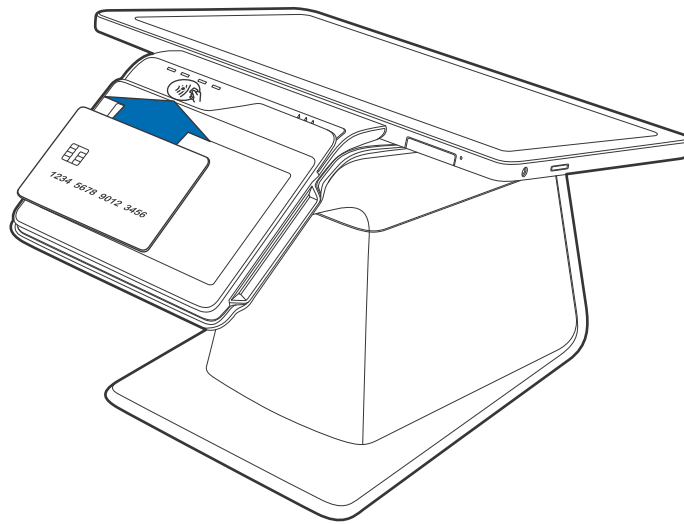


Figure 19

### Conducting a Contactless Transaction

- 2 After you tap your card or compatible device, the LEDs will light up and the buzzer will sound for about 2 seconds, prompting you to remove your card or compatible device.

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## Specifications

This chapter discusses power requirements, dimensions, and other specifications of the Carbon 8 system.

### Technical Specifications

Refer to the following information on the power, weight, temperature, memory, ports and other technical details about your Carbon 8 system.

#### Consumer Display Temperature

- Operating Environment: 0°C to +50 °C (32 °F to 122 °F)
- Non-Operating Environment: -20 °C to +70°C (- 4 °F to 158 °F)
- Relative humidity: 5% to 90% RH non-condensing

#### Memory

- 512 MB SDRAM and 512 MB Flash memory

#### Magnetic Stripe Card

- Triple-track
- Supports bi-directional card read, swipe speed at 10 IPS to 40 IPS

#### Smart Card Reader

- Non-sliding
- Card conserving plated landing contacts

#### CTLS Function

- EMVCo, VISA, MasterCard approved

#### SAM Requirements

- 1 SAM slot
- ID-000 format

#### Display

- 5-inch capacitive touch screen LCD (854 x 480)
- Software controllable back-light

**Merchant Tablet Unit Power Requirements**

- Input power rating: 5 V DC, 2.2 A.

**Temperature**

- Operating Environment: 0°C to +50 °C (32 °F to 122 °F)
- Non-Operating Environment: -20 °C to +70°C (- 4 °F to 158 °F)
- Relative humidity: 5% to 90% RH non-condensing

**Memory**

- 1 GB SDRAM and 16 GB Flash for System

**Audio and Video**

- 8-inch capacitive touch screen LCD (1280 x 800)
- Audio jack (audio and microphone)
- Front- and Rear-facing cameras capable of barcode reading
- SD Card slot

**Communication**

- Wi-Fi
- Bluetooth

**Sensors**

- Accelerometer (Gyroscope + Accelerometer)
- e-Compass
- Ambient light

**Stand Unit Power Requirements**

- Input power rating: 24 V DC, 2.5 A
- External universal-input 90 W power supply, compliant with Energy Efficiency.

**Temperature**

- Operating Environment: 0°C to +50 °C (32 °F to 122 °F)
- Non-Operating Environment: -20 °C to +70°C (- 4 °F to 158 °F)
- Relative humidity: 5% to 90% RH non-condensing

**Thermal Printer**

- Supports 80 mm wide x 30 mm diameter paper roll
- Out-of-Paper Sensor.



- Paper cutter

### Communication

- Wi-Fi
- Bluetooth
- Ethernet
  - Speed 10 Base-T /100 Base-TX
  - Compliant with IEEE802.3 LAN networks.
- USB
  - Three 500 mA USB high speed ports
  - One 1 A USB high speed port
- Service port (Service use only).

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## CHAPTER 4

### Maintenance and Cleaning

Your Carbon 8 should be treated with care. It has no user-serviceable parts.

The following suggestions will help you protect your warranty coverage.

- Do not store the device in hot areas. High temperatures can shorten the life of electronic devices, damage batteries and warp or melt certain plastics.
- Do not store the device in cold areas. When the device returns to its normal temperature, moisture can form inside the device and damage electronic circuit boards.
- Do not drop, knock, or shake the device. Rough handling can break internal circuit boards and fine mechanics.
- Do not use harsh chemicals, cleaning solvents or strong detergents to clean the device. Use only a soft, clean, dry cloth for cleaning.

These suggestions apply equally to your device, or any of its attachments or accessories. If your device is not working properly, take it to the nearest Verifone-authorized service provider for servicing or replacement.

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#### CAUTION



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

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#### Additional Safety Information

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The following is additional information for your safety in using this device.

#### Potentially Explosive Environments

When using the device in areas with potential risk of explosion, such as petrol stations, follow the advice of all signs and instructions. If there has been a leak, do not use this device.

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## Service and Support

For Carbon 8 problems, contact your local Verifone representative or service provider.

For device product service and repair information:

- USA – Verifone Service and Support Group, 1-800-834-4366, Monday - Friday, 8 A.M. - 8 P.M., eastern time.
- International – Contact your Verifone representative.

### Service Returns

Before returning the unit to Verifone, you must obtain a Merchandise Return Authorization (MRA) number. The following procedure describes how to return one or more card reading units for repair or replacement (U.S. customers only).

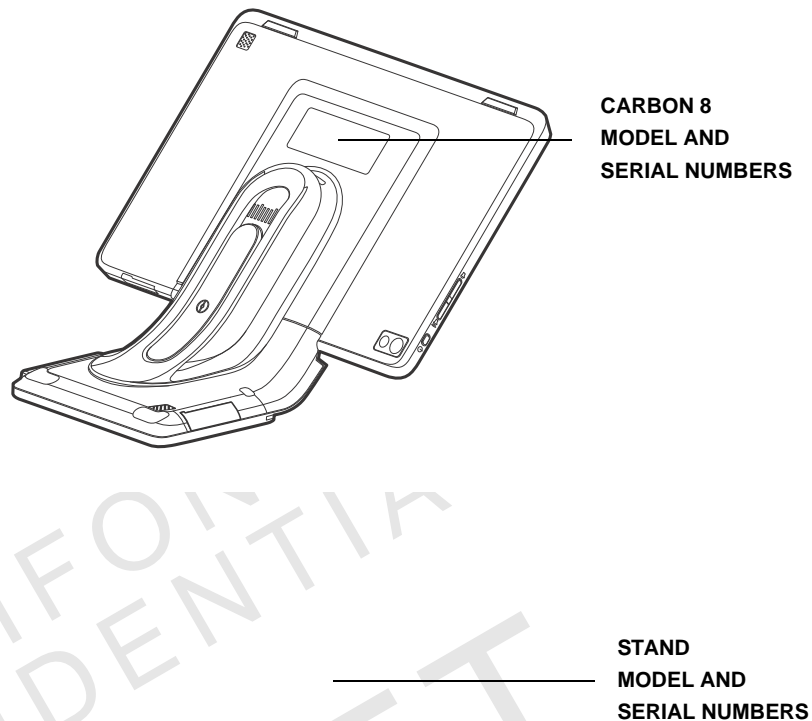
#### NOTE



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 (see [Figure •](#)) on the underside of each unit to be returned:
  - Product ID, including the model and part number. For example, "M179-xxx-xx-xxx" and "PTID xxxxxxxx."

- Serial number (S/N 40x-xxx-xxx).



**Figure 20** Information Labels on Carbon 8 and Stand

- 2 Within the United States, call Verifone toll-free at 1-800-834-4366.
- 3 Select the MRA option from the automated message. The MRA department is open Monday to Friday, 8 A.M.–8 P.M., eastern time.
- 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 and your fax number.

- You will be issued MRA number(s) and the fax will be returned to you.



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

- Describe the problem(s) and provide the shipping address where the repaired or replacement unit must be returned.
- Keep a record of the following items:
  - Assigned MRA number(s).
  - Verifone serial number assigned to the unit you are returning for service or repair (serial numbers are located on the top of the unit, (see [Figure 4](#)).
  - 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 top of the unit).

## Accessories and Documentation

Verifone produces accessories and documentation for the card reader. When ordering, please refer to the part number in the left column.

Verifone Online Store at [www.store.verifone.com](http://www.store.verifone.com)

- USA – Verifone Customer Development Center, 1-800-834-4366, Monday - Friday, 7 A.M. - 8 P.M., eastern time
- International – Contact your Verifone representative

### Connection Cables

CBL159-312-01-A	LAN cable for Ethernet connections.
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### Power Cables

PWR179-003-01-A	5 V, 2.2 A, 11 W Power Pack.
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### Peripherals

MSC179-029-01-A	Cash Drawer
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### Cleaning Kit

02746	Verifone Cleaning Kit.
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### Documentation

VPN DOC179-121-EN-x	<i>Carbon 8 Certifications and Regulations Sheet</i>
VPN DOC179-122-EN-x	<i>Carbon 8 Quick Installation Guide</i>
VPN DOC179-132-EN-x	<i>Carbon 8 Printer Module Quick Installation Guide</i>
VPN DOC179-125-EN-x	<i>Carbon 8 Printer Module Certs and Regs Sheet</i>

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### Troubleshooting Guidelines

This chapter lists possible malfunctions that may occur while operating a Carbon 8 device and recommends appropriate corrective actions. 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 unit comes equipped with tamper-evident labels. The reader 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.

#### CAUTION



Using an incorrectly rated power supply may damage the unit or cause it to not work properly. Before troubleshooting, ensure that the power supply used to power the unit matches the specified requirements (see [Specifications](#) for detailed power supply specifications). If not, obtain the appropriately rated power supply before continuing with troubleshooting.

#### Blank Display

When the Consumer Display screen does not show correct or clearly readable information:

- Check terminal power connection.
- Remove and reapply power to the terminal.
- If the problem persists, contact your local Verifone service provider.

#### Printer Paper Jam

If paper jams inside the printer:

- 1 Open the printer door.
- 2 Remove the damaged paper from the paper roll.
- 3 Replace the paper roll and close the printer door.
- 4 If the problem persists, it may be due to poor paper quality. Install a new roll of higher-quality printer paper.

#### CAUTION



Poor-quality paper may jam the printer. To order high-quality Verifone paper, refer to [Accessories and Documentation](#).

## **Peripheral Device Does Not Work**

If any peripheral device does not work properly:

- Check the power cord connection to the peripheral device.
- Check that the peripheral device is connected to the correct port, has power, and is functioning properly. If possible, perform a self-test on the device in question.
- The cable connecting the peripheral device to the terminal may be defective. Try a different cable. See [Connecting Optional Devices](#).
- If the problem persists, contact your local Verifone representative.

## **Transactions Fail To Process**

There are several reasons why the card reader 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 card reader, the black magnetic stripe should face down.
- If possible, process a transaction manually, using an external keypad, instead of the card reader. If the manual transaction works, the problem may be a defective reader.
- If the problem persists, contact your local Verifone representative.

### **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 SAM cards are properly inserted in the cardholders and that the cardholders are properly secured (see [Installing or Replacing MSAM Cards](#)).
- If the problem persists, contact your local Verifone representative.

## **Printer Does Not Print**

If the printer does not work properly:

- Check terminal power connection.
- Check if the printer is out of paper and that the roll is properly installed. Install a new roll of paper or ensure that the roll is feeding from the bottom.
- Verify that the paper roll is properly installed and the printer door securely closed.
- If the problem persists, contact your Verifone distributor or service provider.

## Consumer Display Does not Show Correct or Readable Information

If the display contains errors or does not power up:

- Connect the terminal in to 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.

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## APPENDIX A

### Caution and Warning Messages

#### Carbon 8 Caution and Warning Messages

Products with UL/cUL certification 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 3** Caution and Warning Messages

Notice	Chapter	Page	English Text	French Text
Caution	Setup	page 14	<p>The Carbon 8 is not waterproof or dustproof, and is intended for indoor use only.</p> <p>Any damage to the unit from exposure to rain or dust may void any warranty.</p>	<p><i>Le Carbon 8 est pas étanche ou à la poussière, et est destiné à une utilisation en intérieur.</i></p> <p><i>Tout dommage à l'unité de l'exposition à la pluie ou à la poussière peut annuler la garantie.</i></p>
Warning	Setup	page 15	<p>Do not use a unit that has been tampered with or otherwise damaged. This unit comes equipped with tamper-evident labels. If a label or component appears damaged, immediately notify the shipping company and your Verifone representative or service provider.</p>	<p><i>Ne pas utiliser une unité qui a été altéré ou endommagé. Cet appareil est équipé d'étiquettes inviolables. Si une étiquette ou d'un composant semble endommagé, avertissez immédiatement la compagnie de navigation et votre représentant ou du prestataire de services Verifone.</i></p>
Warning	Setup	page 18	<p>Do not connect the terminal to the power supply until all the peripherals are attached.</p>	<p><i>Ne pas connecter le terminal à l'alimentation jusqu'à ce que tous les périphériques sont branchés.</i></p>
Caution	Setup	page 19	<p>Poor-quality paper can jam the printer and create excessive paper dust. To order high-quality Verifone paper, refer to Accessories and Documentation.</p> <p>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.</p> <p>Never load a roll of paper with folds, wrinkles, tears, or holes at the edges.</p>	<p><i>Papier de mauvaise qualité peut provoquer un brouillage et de créer excessive de poussière de papier. Pour commander - papier de haute qualité Verifone, consultez Accessoires et documentation.</i></p> <p><i>Gardez le papier thermique dans un endroit sombre. Manipulez le papier thermique attentivement: impact, friction, la température, l'humidité et les huiles affectent les caractéristiques de couleur et de stockage du papier.</i></p> <p><i>Ne jamais charger un rouleau de papier avec des plis, des larmes, ou des trous sur les bords.</i></p>

**Table 3** Caution and Warning Messages (continued)

Notice	Chapter	Page	English Text	French Text
Caution	Setup	page 21	Observe standard precautions when handling electrostatically sensitive devices. Electrostatic discharges can damage this equipment. Verifone recommends using a grounded anti-static wrist strap.	<i>Respecter les précautions standard lors de la manipulation des appareils sensibles aux décharges électrostatiques. Les décharges électrostatiques peuvent endommager cet équipement. Verifone recommande d'utiliser un bracelet anti-statique à la terre.</i>
Note	Setup	page 23	Wipe the Stand feet with a moist cloth to clean the adhesive lining when necessary.	<i>Essuyez les pieds du support d'impression avec un chiffon humide pour nettoyer le revêtement adhésif si nécessaire.</i>
Caution	Setup	page 24	Before connecting any peripheral device, remove the power cord from the terminal and ensure that the green indicator LED is not lit. Reconnect the power cord only after you are finished connecting the peripheral device(s). For complete information about peripheral installation and use, refer to the user documentation supplied with those devices.	<i>Avant de connecter un périphérique, débranchez le cordon d'alimentation de la borne et de veiller à ce que la LED témoin verte est pas allumé Rebranchez le cordon d'alimentation seulement après que vous avez terminé de connecter le périphérique (s) périphérique. Pour des informations complètes sur l'installation et l'utilisation périphérique, reportez-vous à la documentation utilisateur fournie avec ces périphériques.</i>
Note	Setup	page 24	Make sure you tuck the cables under the Stand legs when all cables are installed. This provides some protection to the cables and connectors.	<i>Assurez-vous de replier les câbles sous les pieds du support d'imprimante lorsque tous les câbles sont installés. Cela fournit une certaine protection aux câbles et aux connecteurs.</i>
Caution	Setup	page 24	Some devices (such as PIN pads) may require a separate power source. Before connecting to any device, remove the power cord from the Carbon 8 Stand.	<i>Certains périphériques (tels que les blocs PIN) peuvent nécessiter une source d'alimentation séparée. Avant de brancher un appareil, retirez le cordon d'alimentation du support Carbon 8.</i>
Caution	Setup	page 25	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, Technical Specifications, for detailed power supply specifications.) Obtain the appropriately rated power supply before continuing with troubleshooting.	<i>Utilisation d'une alimentation mal classé peut endommager le terminal ou de l'empêcher de travailler comme spécifié. Avant de dépannage, assurez-vous que l'alimentation est utilisé pour alimenter le terminal correspond aux exigences spécifiées sur le fond de la borne. (Voir le chapitre 3, Caractéristiques techniques, pour les caractéristiques de l'alimentation.) Obtenir l'alimentation nominale appropriée avant de continuer avec le dépannage.</i>



**Table 3** Caution and Warning Messages (continued)

Notice	Chapter	Page	English Text	French Text
Note	Setup	page 25	Plugging in the Stand power pack to a power source automatically powers up the Carbon 8 terminal if the unit is mounted on the stand.	<i>Le branchement du bloc d'alimentation du support d'imprimante à une source d'alimentation active automatiquement la borne Carbon 8 si l'unité est montée sur le support.</i>
Warning	Setup	page 25	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.  To protect against possible damage caused by lightning strikes and electrical surges, consider installing a power surge protector.	<i>Ne pas brancher le bloc d'alimentation à une prise extérieure ou exploiter le terminal à l'extérieur.  Déconnexion de l'alimentation lors d'une transaction peut entraîner des fichiers de données de transaction non encore stockées dans la mémoire terminal pour être perdu.  Pour se protéger contre de possibles dommages causés par la foudre et les surtensions électriques, pensez à installer un protecteur de surtension.</i>
Caution	Setup	page 27	Leave the smart card in the card reader until the transaction is complete.  Premature card removal will invalidate the transaction.	<i>Laissez la carte à puce dans le lecteur de carte jusqu'à ce que la transaction est terminée.  Retrait prématuré de la carte d'invalider la transaction.</i>
Caution	Maintenance and Cleaning	page 33	Never use thinner, trichloroethylene, or ketone-based solvents – they can deteriorate plastic or rubber parts.	<i>Ne jamais utiliser de diluant, le trichloréthylène ou des solvants à base de cétone - ils peuvent détériorer les pièces en plastique ou en caoutchouc.</i>
Caution	Troubleshooting Guidelines	39	Using an incorrectly rated power supply may damage the unit or cause it to not work properly. Before troubleshooting, ensure that the power supply used to power the unit matches the specified requirements (see Specifications for detailed power supply specifications). If not, obtain the appropriately rated power supply before continuing with troubleshooting.	<i>Utilisation d'une alimentation mal classé peut endommager l'appareil ou provoquer sa ne fonctionne pas correctement. Avant de dépannage, assurez-vous que l'alimentation utilisée pour alimenter l'unité correspond aux exigences spécifiées (voir spécifications pour les caractéristiques de l'alimentation ). Si non, obtenir l'alimentation nominale appropriée avant de continuer avec le dépannage.</i>
Caution	Troubleshooting Guidelines	page 39	Poor-quality paper may jam the printer. To order high-quality Verifone paper, refer to Accessories and Documentation.	<i>Papier de mauvaise qualité peut provoquer un bourrage. Pour commander - papier de haute qualité Verifone, consultez Accessoires et documentation.</i>



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## Carbon 8

### *Installation Guide*

