Verifone ®

Carbon Mobile 5

Installation Guide

DRAFT

Carbon Mobile 5 Installation Guide
© 2019 Verifone, Inc.

Product Warranty:

For product warranty information, go to http://www.verifone.com/terms.

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

Verifone, Inc.
1-800-Verifone

www.verifone.com

Verifone Part Number DOC278-003-EN-A, Revision A.5

CONTENTS

This guide is your primary source of information for setting up Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer.

Audience   This guide is useful for anyone installing the Verifone Carbon Mobile 5 device.

Organization   This guide is organized as follows:

Chapter 1, Device Overview. Provides an overview of the Verifone Carbon Mobile 5 device.

Chapter 2, Device Setup. Explains how to set up the Verifone Carbon Mobile 5 device. It tells you how to select a location and establish power connection.

Chapter 3, Specifications. Discusses power requirements and dimensions of the Verifone Carbon Mobile 5.

Chapter 4, Maintenance. Explains how to maintain your Verifone Carbon Mobile 5.

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

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

Related Documentation   To learn more about the Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer, refer to the following set of documents:

Verifone Carbon Mobile 5 Certifications and Regulations Sheet	VPN -DOC278-001-EN-A
Verifone Carbon Mobile 5 Quick Installation Guide	VPN -DOC278-002-EN-A
Verifone Carbon Mobile 5 with Printer Quick Installation Guide	VPN -DOC278-01-002-EN-A

Conventions and Acronyms

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

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 PIN pad port.
CAUTION	The caution symbol indicates possible hardware or software failure, or loss of data.	The device 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 device near water.

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
ARM	Acorn RISC Machine
EMV	Europay MasterCard and VISA
LCD	Liquid Crystal Display
NFC	Near Field Communication
MRA	Merchandise Return Authorization
PCI	Payment Card Industry
PED	PIN Entry Device
PIN	Personal Identification Number
USB	Universal Serial Bus
VPN	Verifone Part Number

Device Overview

This chapter provides a brief description of the Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer devices.

The Verifone Carbon Mobile 5 device is a best-in-class, single-screen commerce solution. A secure wireless handheld mobile payment device that allows merchants to process credit/debit card transactions anywhere. In combination with Verifone Connect digital services, it offers checkout, payment, and the ability to run Android apps, like loyalty and inventory. It also enables clients to remotely monitor and update their device using Verifone's estate management solution. The Verifone Carbon Mobile 5 device supports Bluetooth BLE and WiFi, and meets PCI 5.X SRED requirements for maximum security.

The Verifone Carbon Mobile 5's
while supporting all payment methods - magnetic stripe, EMV, and NFC/CTLS, including Apple Pay, Google Pay, and Samsung Pay mobile wallets. The easy to read color touch screen supports all payment related user interactions, including secure PIN entry.

NOTE

Verifone ships two variants of the Verifone Carbon Mobile 5 device for different markets. Your device may have different features described in this section.

The Verifone Carbon Mobile 5 device has two variants:

- Verifone Carbon Mobile 5
- Verifone Carbon Mobile 5 with Printer

The two variants (Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer) differ in memory size, front camera, battery size and printer.
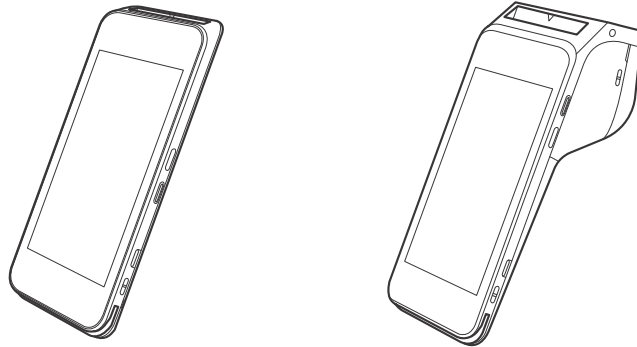
Figure 1   **Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer**

Key Features and Benefits

	Features	Verifone Carbon Mobile 5	Verifone Carbon Mobile 5 with Printer
Processor	• Cortex A7 Quad Core, 1.1GHz • (QCOM 8909), (QCOM MSM8909)	Yes	Yes
Memory	• 1 GB RAM (option for 2 GB) • 8 GB Flash (option for 16 GB) • Secure processor: 128 MB DRAM, 256 MB Flash	Yes	Yes
Display	• 5" (720 × 1280) HD IPS LCD touchscreen	Yes	Yes
Keypad	• On-screen, Navigator possible	Yes	Yes
Printer	• SKU	NA	Yes

Payment	• MSR • SCR • CTLS	Yes	Yes
Audio		• Loudspeaker • Microphone	• Loudspeaker • Microphone • Optional 3.5mm Headset Jack
Communication	• 4G LTE • 3G • 2G • Bluetooth 4.2 BLE, • 2.4 GHz + 5.8 GHz WiFi, • 802.11 a, b, g, n, GPS, GLONASS	Yes	Yes
Peripheral Ports	• USB-C • OTG • Charging pins	Yes	Yes
Camera	• 5 MP • Auto-focus • Fast scanner • LED aimer • LED torch Optional 2 MP front QR/ barcode scanner	Yes	Yes
Barcode reader	•	Yes	Yes
Battery	• Removable battery provides 300 CTLS transactions over 10.5 hrs.	4000-mAh	6200-mAh
Dimensions		• Length: 165.7 mm • Width: 77.9 mm • Height: 15.8 mm • Weight: 275 g	• Length: 184.29 mm • Width: 77.9 mm • Height: 32.7 mm • 59.55(Head) • Weight: 495 g with full paper roll

Security	• PCI PTS 5.X-approved • SRED • Supports AES DUKPT	Yes	Yes
Power Supply		• Up to 5 V 3 A charging • 4000 mAh Li-Ion rechargeable battery	• Up to 5 V 3 A charging • 6200 mAh Li-Ion rechargeable battery
SIM/SAM	• 1 Nano SIM, • 1 micro SAM or 2nd micro SIM	Yes	Yes
Card Reader	• Triple track MSR • EMV L1-approved smart card • ISO • NFC/CTLS	Yes	Yes
Environmental	• Operating temperature: -10° to 50deg C (14deg to 122deg F) • Storage temperature: -25° to 70° C (-13° to 158° F) • Relative humidity: 5% to 95% • Non-condensing	Yes	Yes
Printer		NA	• High-speed thermal printer: 30 lps • Paper roll: Max 57.65mm Length x Max 40mm Diameter.

Features and Benefits

Verifone Carbon Mobile 5 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. Some variants provide additional expansion options such as a bar code scanner and weighing scale, connectivity features: USB, Ethernet as well as power charging and an embedded internal thermal printer (ITP).

The Verifone Carbon Mobile 5 provides the right combination of features and functions including a triple-track magnetic-stripe card reader, smart card reader, digital PINpad and contactless/NFC support.

BT and WiFi Performance

The dynamic combination of Bluetooth and Wi-Fi provides convenience to wireless payment with fewer dropped transactions, and flexible point-of-sale options.

Modern Application Environment

- The Verifone Carbon Mobile 5 offers 256 MB flash and 128 MB of dynamic memory allocation for the terminal and 1GB (optional 2GB) of SDRAM, which supports multiple applications.
- The primary smart card reader and the MSAMs safeguard sensitive financial data and support multiple smart card schemes.
- Verifone Carbon Mobile 5 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 Verifone Carbon Mobile 5 devices.

Accepts All Forms of Payment On-the-Go

- Accommodates all payment types - Magnetic stripe, EMV, Contactless/NFC, and mobile wallets along with a 5 inch color touch screen with digital PIN pad and signature capture.

Exceptional Ease of Use

- The lightweight, compact, stylish, and ergonomic balance provide a convenient payment experience for the user.
- Horizontal, bi-directional, magnetic stripe card reader at the top of Verifone Carbon Mobile 5 features an enlarged card entrance and delivers optimal card swiping and reading.

Performance and Durability

- Secure and powerful 300 MHz processing encrypts and completes transactions quickly.
- High-capacity, lithium-ion rechargeable battery for CM5 only (4.4 V / 4000 mAh) that easily supports a full 16-hour business day on a single charge.
- The USB-C port allows for convenient product charging as well as connection to accessories, and Android, iOS, and Windows devices.
- Drop-tested up to 1.2m on marble floor surface.
- This device has 256MB Flash, 128MB SDRAM of memory.

Security

- PCI PED 5.X approved for PIN-based transactions

- TLS/SSL protocols

- Direct key injection using industry standard HSMs

- VeriShield Retain

- VeriShield Remote Key

- Verifone Secure Data

- VeriShield Total Protect

- MasterCard TQM

- IPP8 functionality plus multiple AES DUKPT engines

- EMV L1 and L2

- ISO7816-3, ISO7816-10, and EMV 4.3 standards

Connectivity   **USB host/ device port**

- 1 USB Type-C Receptacle (can be used for charging)

- Support Android UART software debug (TXD, RXD)

- Support Secure Processor UART software debug (TXD0, RXD0)

- Android USB 2.0 HighSpeed Host/Client Support

- Secure Processor USB 2.0 HighSpeed Host/Client Support 5V/500mA for external USB peripherals

- USB host or device is configured by Software

- The Verifone Carbon Mobile 5 USB-C port is on the right hand side

- Smart device communication is through USB-C

Cellular (wireless communication)

- 4G LTE (3GPP R8 Cat.4 FDD and TDD)

- 3G UMTS (3GPP R8 DC-HSDPA/HSPA+/HSDPA/HSUPA/WCDMA)

- 2G GSM (R99/GPRS/EDGE)

Bluetooth (wireless communication)

- Bluetooth 4.2 (BR/EDR+BLE)

- RF transmitter output power Class 1

- RF receiver GFSK typical -90dBm,π/4 PSK typical -90dBm, 8-DPSK typical -83dBm

WiFi (wireless communication)

- WiFi 2.4GHz/5GHz dual band, 802.11 a/b/g/n

Charger IC - Single cell or dual parallel cell switching mode Li-Ion battery charger

- Power path management integrated

- Programmable charging parameters

- Support dual inputs from either charging pins or USB connector

Main Battery
- Removable battery

- Nominal capacity/voltage: 4000mAh/3.85V (CM5) or 6200mAh/3.7V (CM5P Printer)

Fuel Gauge
- Host-side fuel gauge with Coulomb counter function

Exceptional Ease of Use
- Capacitive touch-screen UI access for merchant and customer

- 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 LCD displays

- The multiple font-capable optional thermal printer simplifies paper loading and reduces paper jams

- Uses Max 57.65 mm Length x Max 40 mm Diameter paper rolls, prints at 100 mm/sec

DRAFT

Device Setup

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

- Usage Guidelines
- Unpacking the Shipping Carton
- Examining Verifone Carbon Mobile 5 Device Features
- Examining Connection Port
- Installing or Replacing MSAM Cards
- Examining Connection Port
- Using the Battery
- Connecting the Terminal Power Pack
- Loading a Paper Roll in Device with Printer
- Charging the Battery
- Using the Smart Card Reader
- Using the Magnetic Card Reader
- Using the CTLS Reader

Usage Guidelines

Use the following guidelines when using your Verifone Carbon Mobile 5.

Environmental Factors

- Select a flat support surface, such as a countertop or table, place the device. Please store your Verifone Carbon Mobile 5 device in a dry area:
  - Operation temperature is -10--50 degree Celsius (14--122 F).
  - Storage temperature is -25--70 degree Celsius (-13--158 F).
- Do not use the device where there is high heat, dust, humidity, moisture, or caustic chemicals or oils.
- Keep the device away from direct sunlight and anything that radiates heat, such as a stove or motor.

CAUTION

The device 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.

Personal Security Considerations

The Verifone Carbon Mobile 5 can be used as handover device. Always exercise extreme caution when conducting transactions especially during PIN entry.

- Hand the Verifone Carbon Mobile 5 directly to the cardholder for PIN entry.

- Encourage the cardholder to hold the Verifone Carbon Mobile 5 close to avoid others from seeing the information entered.

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 device 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 Verifone Carbon Mobile 5 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:

- Verifone Carbon Mobile 5 unit

- USB-C to USB cable

- Paper roll

NOTE

Verifone ships variants of the Verifone Carbon Mobile 5 for different markets. Your unit may have different options or accessories described in this section.

3   Remove all plastic wrapping from the unit and other components.

4   Remove the clear protective film from the display.

CAUTION

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.

5   Save the shipping carton and packing material for future repacking or storing the device.

NOTE	• Charge the Verifone Carbon Mobile 5 device for eight hours before initial use.
	• The Verifone Carbon Mobile 5 device comes with an extra battery, that will power the security circuit of the device, in case the device is tampered, and the main battery fails to charge. This extra battery has a life of 2 yrs.
	• Ensure not to store the device for more than 1 week without charging, else the secondary battery gets discharged in turn reducing the life of the battery.

Examining Verifone Carbon Mobile 5 Device Features

Before you continue the installation process, familiarize yourself with the features of the Verifone Carbon Mobile 5 (See Figure 2.)

Front Panel   The front panel includes the following features:
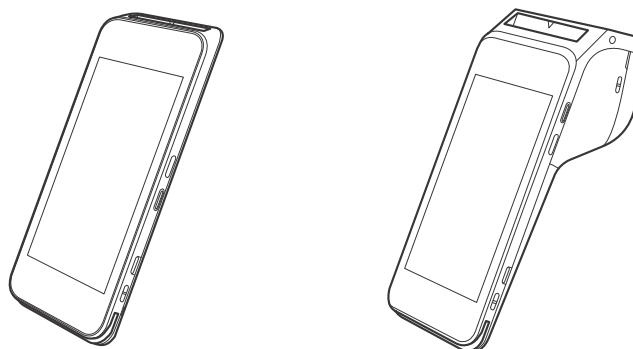
Figure 2   Verifone Carbon Mobile 5 (Front Panel)

• The Verifone Carbon Mobile 5 device has a colored capacitive-touch **LCD Display**

• A **smart card reader** built into the top of the device to process smart card-based debit or credit transactions. For directions on how to use a smart card, see Using the Smart Card Reader.

• A **magnetic card reader** built into the bottom part of the device for performing debit or credit card transactions. The card can be swiped from either direction. To ensure a proper read of the magnetic swipe card, insert the magnetic card from the side of the device as shown in Figure 7.

• The Verifone Carbon Mobile 5 device has a power/charging indicator.

• ALL LED's to indicate CTLS, EMV, MSR, BT, and Wi-Fi are shown ON the display.

• **CTLS** around the display for contactless payments. For directions on how to conduct contactless transactions, see Using the CTLS Reader.

Installing or Replacing MSAM Cards

When you first receive your Verifone Carbon Mobile 5, 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 Verifone Carbon Mobile 5 for different markets. Your unit may have different options or accessories described in this section.

To Install or replace MSAMs/MSIMs

FOR CM5

1 Turn off the Verifone Carbon Mobile 5 device.
2 Place the device face down on a soft, clean surface to protect the display from scratches.
3 Remove the battery cover from the bottom and provide access to the MSAM card slot.
4 Remove any previously installed MSAM cards from the cardholder by pulling out the MSAM in a horizontal direction.
5 Insert a MSAM card (with contacts face down) by carefully sliding it into the slot until the card is fully inserted.
6 Make sure the card orientation is matching with the icon engraved in the housing.
7 Place the battery cover.

FOR CM5P

1 Turn off the Verifone Carbon Mobile 5 device.
2 Place the device face down on a soft, clean surface to protect the display from scratches.
3 Remove the battery cover from the bottom corners.
4 Remove the primary battery from the battery compartment, but keep the battery connected.
5 Remove any previously installed MSAM cards from the cardholder by pushing down on the Nano-SIM icon (or actual Nano-SIM card) and pulling out the MSAM in horizontal direction.
6 Insert a MSAM card (with contacts face down) by carefully sliding it into the slot until the card is fully inserted.
7 Make sure the card orientation is matching with the icon engraved in the housing.
8 Place the primary battery.
9 Place battery cover.

Examining Connection Port

The Verifone Carbon Mobile 5 device has one primary USB-C port used for power and download.
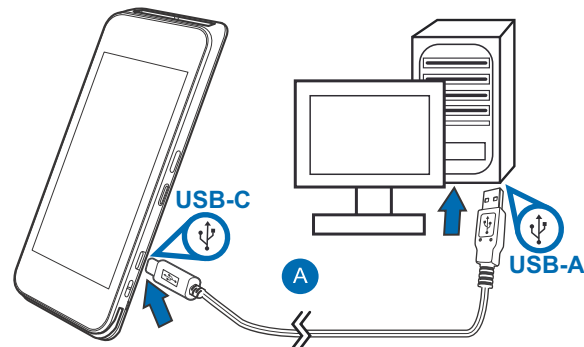

Figure 3   The Verifone Carbon Mobile 5 Primary USB-C Port

Using the Battery

The Verifone Carbon Mobile 5 device uses a single cell Li-Polymer battery or a dual cell Li-Ion battery. The internal logic of the 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).

Battery Features

The following are features of the battery:

- Single Li-Polymer cell for CM5 and two Li-Ion cells for CM5 printer.
- A safety circuit that:
  - Prevents cell damage from overcharge, over-discharge, or overheating
  - Activates when the battery is left in an unused device for extended periods

NOTE

- Charge the Verifone Carbon Mobile 5 device for eight hours before initial use.
- The Verifone Carbon Mobile 5 device comes with an extra battery that will power the security circuit of the device in case, the device is tampered, and the main battery fails to charge. This extra battery has a life of 1 year.
- Do not store the device for more than 1 week without charging, else the secondary battery gets discharged in turn reducing the life of the battery.
- Disconnecting and unplugging the device power pack, reduces the life of the coin cell battery, which does not recharge and must be replaced if drained.
- Conserve battery power by turning the Verifone Carbon Mobile 5 device off when not in use. 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 USB-C end of the power pack to the device and plugging the other end of the power pack into a wall outlet.

Manual Startup   Hold the start button for about 3 seconds until the device displays the startup screen.

NOTE

Once the device is powered up, The Verifone ADK MAC screen is displayed.

Manual Shutdown   Hold the start button for about 1 second until the message is displayed on the screen. Touch the "Off" selection to turn off.

NOTE

The screen is blank when the device has no power.

Connecting the Terminal Power Pack

Connect the Verifone Carbon Mobile 5 device to the provided USB cable and insert the other end into any USB charger head for initial charging.

CAUTION   Using an incorrectly rated power supply may damage the device or cause it not to work as specified. Before troubleshooting, ensure that the power supply being used to power the device matches the requirements specified on the bottom of the device. (See Specifications for detailed power supply specifications.) You can use any standard USB charger.

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

During a transaction, disconnecting the power by unplugging the device from a wall power while at very low battery charge may cause transaction data files not yet stored in the device memory to be lost.

Each Verifone Carbon Mobile 5 device comes with a power supply cable, USB-A to USB-C cable is used to connect the device directly to an USB outlet to charge the battery. The Verifone Carbon Mobile 5 unit is equipped with an USB capable universal port.

To Connect the Terminal Power Supply

1 Insert the USB-C to the Verifone Carbon Mobile 5 and USB-A port to the power supply or Desktop.
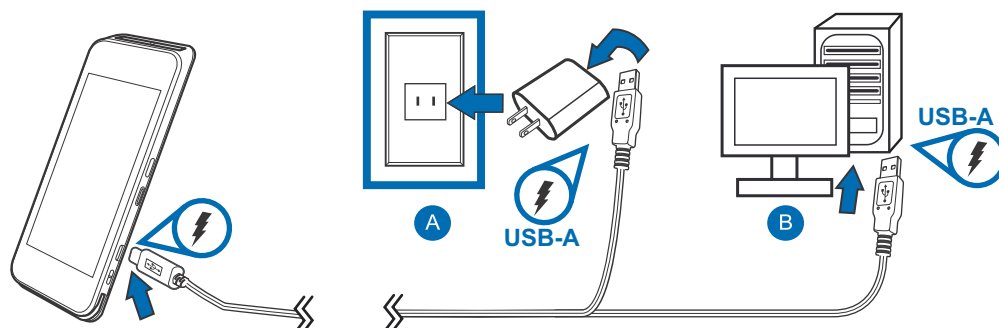
Figure 4   Verifone Carbon Mobile 5 Power Supply Connection

TIP

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

Loading a Paper Roll in Device with Printer

Install a paper roll before you can process transactions that require a receipt.

The Verifone Carbon Mobile 5 Printer Stand uses a roll of 58 mm x 40 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

A message is always displayed to indicate when 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 both sides of the paper door, which is on the upper corner of the device and open the paper door by pulling outside (See below Figure 5-A).

2 Remove any partial roll of paper in the tray.
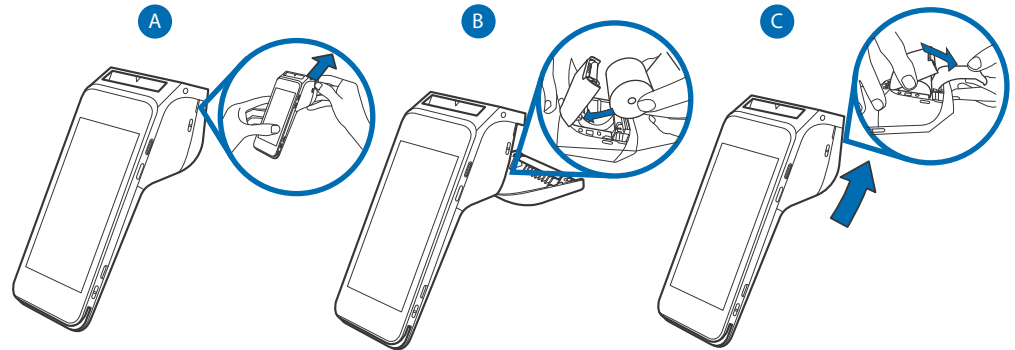
Figure 5   Steps to Install a Paper Roll in Verifone Carbon Mobile 5

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 Pull the paper past the printer door.

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

7 With the printer paper extending outside, close the printer door by swinging upward until the door clicks shut, allowing the printer paper to extend outside the printer door.

Charging the Battery

After unpacking your Verifone Carbon Mobile 5 device, connect the power pack to the unit for eight hours or until fully charged. Refer to the Using the Battery section for more details.

Battery Life

Charging and discharging the battery will cause normal wear on the battery.

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

Using the Smart Card Reader

Insert the smart card to proceed with the EMV transaction. EMV supports credit card and debit card transactions.

To Conduct a Smart Card Transaction

1 Position the smart card with the contacts facing upward (see illustration below).

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

3 Wait for the application to indicate a completed transaction before removing the card. Premature card removal invalidates the transaction.
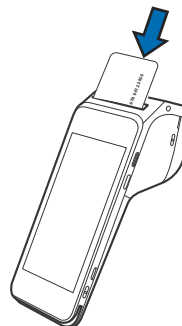
Figure 6   Inserting a Smart Card

Using the Magnetic Card Reader

Use the magnetic stripe reader to perform credit and debit card transactions.

To Conduct a Debit or Credit Card Transaction

1 Position the card with the magnetic stripe facing backwards.

2 To ensure a proper read of the magnetic swipe card, insert the magnetic card from the side of the device, as shown in the illustration below.
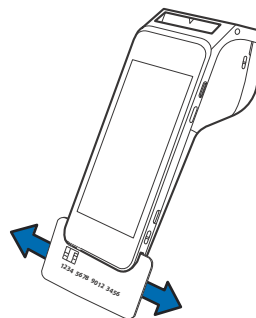
Figure 7   Using Magnetic Stripe Card

3 Swipe the card through the magnetic card reader.

Using the CTLS Reader

The Verifone Carbon Mobile 5 supports contactless credit or debit card transactions. To perform a contactless transaction, gently tap the card or hold the card against the surface of the display.
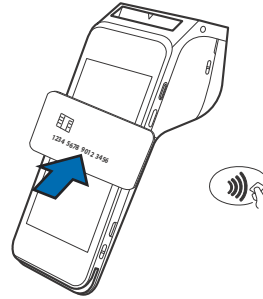
Figure 8   Using the CTLS Reader

Before using CM5, please follow below instruction to install the CM5 in the holster

"The holster is designed such that the device can only be placed into the holster with the front of the device facing the body, as shown in the image below. If a holster not approved by Verifone is used with this device, the user is to place the device in the same orientation as described below."

CM5 Device   1. Holster housing

Front face
of device

A-A

Body
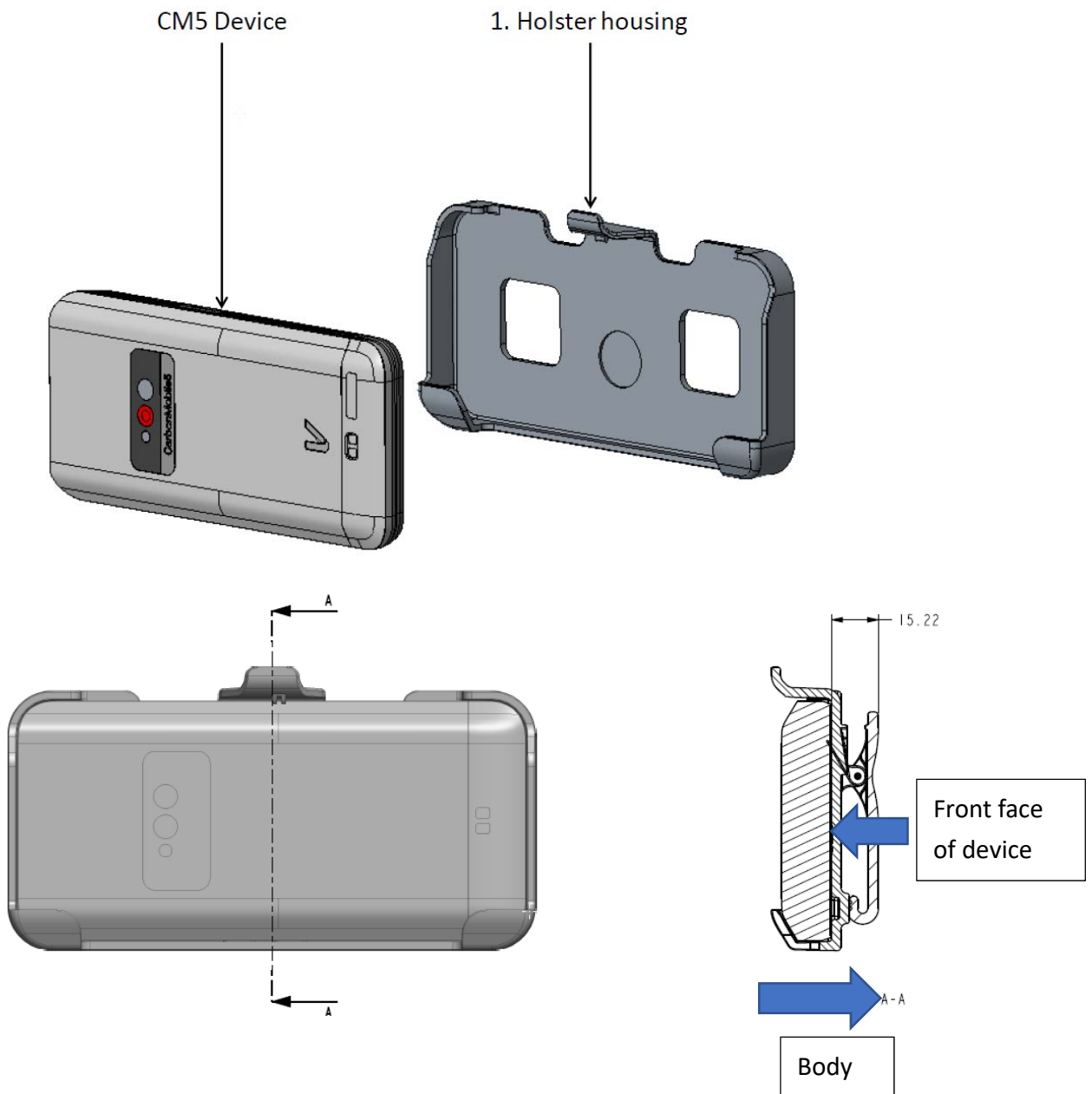
Specifications

This chapter discusses the power requirements and dimensions of the Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer devices.

Technical Specifications

Refer to the following information on the power, weight, temperature, memory, ports and other technical details about Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer devices.

Temperature

- Operating Environment:
    - Temperature: -10°C to 50°C (14 °F to 122 °F)
    - Relative humidity: 5% to 95% RH non-condensing
- Non-Operating Environment:
    - Temperature: -25°C to 70°C (-13°F to 158°F)

Relative humidity: 5% to 95% RH non-condensing

Android Memory

- RAM: 1GB (option for 2GB)
- Flash: 8GB (option for 16GB)
- Secure processor: 128 MB DRAM, 256 MB Flash

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

SAM Requirements

- 1 SAM slot
- ID-000 format

Display

- 5" (720 × 1280) HD IPS LCD touchscreen

Unit Power Requirement

- Input power rating: 5 V DC, 2 A
- Charging via USB-C to and external dock connector
- Rechargeable battery
  - **Verifone Carbon Mobile 5** - 3900 to 4000 mAh Li-Polymer rechargeable battery
  - **Verifone Carbon Mobile 5 with Printer** - 6200 mAh Li-Ion rechargeable battery

External Dimensions

	Verifone Carbon Mobile 5	**Verifone Carbon Mobile 5 with Printer**
Length	165.7 mm	184.29 mm
Width	77.9 mm	77.9 mm
Height	15.8 mm	
Drum		32.7 mm handle/59.55 mm
Paper roll		495 g with full paper roll
Weight	275 g (for non-printer)	

Communication

- BT 4.2 BLE (Bluetooth Low Energy)
- WiFi 2.4GHz/5GHz (A/B/G/N)

SIM/SAM

- 1 Nano SIM
- 1 micro SAM or 2nd micro SIM

Audio

- Loudspeaker, microphone
- Optional headset jack (Verifone Carbon Mobile 5 with Printer only)

Camera

- 5 MP, auto-focus
- Fast scanner
- LED aimer
- LED torch

- Optional 2 MP front QR/barcode scanner

Printer

- Verifone Carbon Mobile 5 with Printer
  - High-speed thermal printer: 30 lps
  - paper roll: Max 57.65mm Length x Max 40mm Diameter

DRAFT

Maintenance

The Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer devices have no user-maintainable parts. It can, however, be cleaned.

Surface Cleaning

To clean the device, use a clean cloth slightly dampened with water and a drop or two of mild soap. For stubborn stains, use 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 on the device display.

Magnetic Card Reader

Dirt accumulation can lead to MSR reading problems unless you clean the magnetic stripe reader (MSR) on a regular basis (daily to once a week, depending on usage).

Clean the MSR using commercially available card reader cleaning cards or using Verifone's recommended MSR-cleaning card (PN 02746-02).

NOTE If using a commercially available cleaning card, use ONLY an approved MSR cleaning card made specifically for POS MSR terminals or Petroleum MSR card readers.

Smart Card Reader

Do not attempt to clean the Smart Card Reader (SCR). Doing so may void any warranty. For smart card reader service, contact your Verifone distributor or service provider.

CAUTION If you find foreign objects in the SCR, send your terminal to a Verifone authorized repair center.

Do not use Verifone's recommended MSR-cleaning card (PN 02746-02) or commercially available card reader cleaning cards with the SCR.

Additional Safety Information

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

WARNING

Potentially Explosive Environments

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

DRAFT

Verifone Service and Support

For Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer problems, contact your local Verifone representative or service provider.

For Verifone Carbon Mobile 5 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 Device for Service

Before returning the device, you must obtain an MRA number. The following procedure describes how to return one or more devices 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 devices and accessories.

To return a device for service

1 Get the following information from the on the box or underneath the plastic rear shell. You have to remove the white plastic shell from the rear of the device to expose the printed labels or get the information from the labels on the box. at the back of *each* Verifone Carbon Mobile 5 to be returned:

- Product ID, including the model and part number. For example, "Verifone Carbon Mobile 5" and "M087-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 Department." include 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 to "Verifone MRA Department."

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

> **NOTE**
>
> One MRA number must be issued for each device 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 device you are returning for service or repair (device serial numbers are located at the back 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 at the bottom of the white plastic shell or box labels.

Accessories and Documentation

Verifone produces the following accessories and documentation for the Verifone Carbon Mobile 5 and Verifone Carbon Mobile 5 with Printer. When ordering, please take note of the part number.

- Verifone online store at `www.estore.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

Accessories

Verifone Certified Power Adapter	PWR087-300-01-A
Verifone MSR Cleaning Kit	02746-01

Documentation

Verifone Carbon Mobile 5 Certifications and Regulations Sheet	VPN -DOC278-001-EN-A
Verifone Carbon Mobile 5 Quick Installation Guide	VPN -DOC278-002-EN-A
Verifone Carbon Mobile 5 with Printer Quick Installation Guide	VPN -DOC278-01-002-EN-A

Troubleshooting Guidelines

The troubleshooting guidelines provided in the following section are included to help you install and configure your Verifone Carbon Mobile 5 successfully. Typical examples of malfunction you may encounter while operating your Verifone Carbon Mobile 5 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 Verifone Carbon Mobile 5 comes equipped with tamper-evident labels. The Verifone Carbon Mobile 5 unit contains no user serviceable parts. Do not, under any circumstance, attempt to disassemble the device. 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

Before troubleshooting, ensure that the power supply being used to power the device matches the requirements specified at the bottom of the device. (See Specifications, for detailed power supply specifications.) Obtain the appropriately rated power supply before continuing with troubleshooting.

Device Does Not Start

- Ensure that the battery charge state is not below the critically low level.

Device Display Does Not Show Correct/ Readable Info

- Recharge the battery.

- Connect the Verifone Carbon Mobile 5 into a known-good power supply (if available) to see if this clears the problem.

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

Battery Does Not Charge

The Verifone Carbon Mobile 5 battery must initially receive a full charge to ensure proper operation.

NOTE	

- Allow the Verifone Carbon Mobile 5 device to remain connected to the power pack for eight hours to ensure the battery receives a full charge.

- Li-Polymer and Li-Ion batteries are not affected by shallow charging. Furthermore, when the device has no external power source or battery the coin cell battery provides power to the security circuit.

- Disconnecting and unplugging the device 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 Verifone Carbon Mobile 5 device off when not in use. 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 USB end of the power pack to the device and plugging the other end of the power pack into a wall outlet.

- The Verifone Carbon Mobile 5 device automatically shuts off when the battery reaches the *critically low* charge state.

- Please charge the device once a week even when the device is not in use.

Blank Display

When the Verifone Carbon Mobile 5 device display screen does not show correct or clearly readable information:

- When the battery connection has some connection issue.

- If the display doesn't turn on, press and hold the power key for 8-10 seconds.

- Connect to the charger.

- If the problem persists, contact your local Verifone service provider.

Transactions Fail to Process

There are several reasons why the device 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 Verifone Carbon Mobile 5 card reader, the black magnetic stripe on the card should face down and outward (see Figure 7).

- Process a transaction manually. If the manual transaction works, the problem may be a defective card reader.

- Contact your Verifone distributor or service provider.

Caution and Warning Messages

Verifone Carbon Mobile 5 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 1 **Caution and Warning Messages**

Notice	Chapter	Page	English Text	French Text
Caution	Setup	page 12	The terminal is not waterproof or dustproof, and is intended for indoor use only.	*Le terminal est pas étanche ou à la poussière, et est destiné à une utilisation en intérieur.*
			Any damage to the unit from exposure to rain or dust may void any warranty.	*Tout dommage à l'unité de l'exposition à la pluie ou à la poussière peut annuler la garantie.*
Warning	Setup	page 13	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.	*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.*
Caution	Setup	page 15	Observe standard precautions when handling electrostatically sensitive devices. Electrostatic discharges can damage this equipment. Verifone recommends using a grounded anti-static wrist strap.	*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.*

Table 1   Caution and Warning Messages (continued)

Notice	Chapter	Page	English Text	French Text
Caution	Setup	page 15	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 Specifications, for detailed power supply specifications.) Obtain the appropriately rated power supply before continuing with troubleshooting.	*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, Caractéristiques, pour les caractéristiques de l'alimentation.) Obtenir l'alimentation nominale appropriée avant de continuer avec le dépannage.*
Warning	Setup	page 15	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.	*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.*
Warning	Setup	Page 16	Do not dispose batteries in a fire. Li-Polymer and Li-Ion batteries must be recycled or disposed of properly. Do not dispose Li-ion batteries in municipal waste sites.	*Ne jetez pas les batteries au feu. Les batteries Li-ion doivent être recyclées ou éliminées correctement.* *Ne jetez pas les batteries Li-ion dans les sites de déchets municipaux.*
Caution	Maintenance and Cleaning	page 23	Never use thinner, trichloroethylene, or ketone-based solvents – they can deteriorate plastic or rubber parts.	*Ne jamais utiliser de diluant, le trichloroéthylène ou des solvants à base de cétone - ils peuvent détériorer les pièces en plastique ou en caoutchouc.*
Caution	Maintenance and Cleaning	page 23	Avoid touching the contacts of the Verifone Carbon Mobile 5 battery. 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.	*Évitez de toucher les contacts de la batterie Verifone Carbon Mobile 5. Les huiles de doigt ternissent les contacts, provoquant de mauvaises connexions. Lorsque vous utilisez une batterie et que la transmission de données est incorrecte ou incomplète, nettoyez les contacts.*

Table 1   **Caution and Warning Messages** (continued)

Notice	Chapter	Page	English Text	French Text
Caution	Troubleshooting Guidelines	Page 27	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.	*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.*
Caution	Troubleshooting Guidelines	Page 27	Before troubleshooting, ensure that the power supply being used to power the device matches the requirements specified at the bottom of the device. (See Specifications, for detailed power supply specifications.) Obtain the appropriately rated power supply before continuing with troubleshooting.	

This device was tested for typical body-worn operations. To comply with RF exposure requirements, a minimum separation distance of 0mm must be maintained between the user's body and the handset, including the antenna. Third-party belt-clips, holsters, and similar accessories used by this device should not contain any metallic components. Body-worn accessories that do not meet these requirements may not comply with RF exposure requirements and should be avoided.

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

DRAFT

Carbon Mobile 5

Installation Guide