

e285 Installation Guide
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Preface

This guide is the primary source of information for setting up the e285.

Audience

This guide is intended for the users involved in e285 device installation.

Organization

This guide is organized as follows:

- Chapter 1: [Device Overview](#) - Provides an overview of the e285.
- Chapter 2: [Device Setup](#) - Provides instructions on configuring the e285.
- Chapter 3: [Specifications](#) - Provides the power requirements and dimensions of the e285.
- Chapter 4: [Maintenance and Cleaning](#) - Explains how to maintain the device.
- Chapter 5: [Service and Support](#) - Furnishes information on contacting local Verifone representatives or service providers, as well as details on ordering accessories or documentation from Verifone.
- Chapter 6: [Accessories and Cables](#) - Provides the range of accessories and cables with corresponding part numbers.
- Chapter 7: [Troubleshooting](#) - Provides guidance for addressing issues that may arise during device installation.

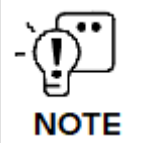


Related Documentation

To learn more about the e285, refer to the following documents associated with the Verifone Part Numbers (VPNs).

| | |
|-------------------------------------|---------------------|
| e285 Certifications and Regulations | VPN DOC087-511-EN-x |
| e285 Quick Installation Guide | VPN DOC087-512-EN-x |

Conventions

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

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

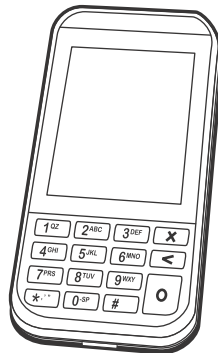
1. Device Overview

This chapter provides an overview of the e285 device:

The e285 device is a standalone, wireless handheld payment device, making it easy to process a transaction anywhere. It provides mobile payment capabilities via 3G connectivity. It is also a powerful 3G/Bluetooth/Wi-Fi dual-band solution – featuring advanced communications for fewer dropped transactions so merchants can accept payments securely, extending their Point-of-sale opportunities.

The e285’s capacitive touch with physical keypad design makes it easily pocketable while still accepting all payment methods - MSR, PSCR, contactless, and wallets. The easy-to-read color touchscreen is capable of signature capture and is fully supported by VeriFone’s developer toolkit which enables to transform of ideas into applications.

Figure: 1 The e285 Unit



Key Features:

- 300 MHz A9 processor delivers power and usability in a convenient “hand-over” design.
- Multi-application operating environment.
- Advanced memory architecture to meet tomorrow’s needs.
- Offers unsurpassed performance on EMV smart card transactions.
- Security architecture exceeds specifications for PCI-PED and sophisticated file authentication.
- Multiple connectivity and contactless options.

- 32-bit processing and multi-tasking capabilities.
- Drop-resistant design minimizes breakage.

Features and Benefits

The e285 provides the right combination of features and functions including a triple-track magnetic-stripe card reader, smart card reader, integrated PIN pad, and contactless/NFC support.

Triple Radio Performance

- The dynamic combination of Bluetooth chip, Wi-Fi, and powerful 3G radio delivers fast, wireless payment convenience, fewer dropped transactions, and flexible point-of-sale options.

Modern Application Environment

- Reliable operating system and powerful tools to create richer customer experiences.
- Common Engage software architecture enables faster and more cost-effective application development.

Accepts All Forms of Payment On-the-Go

- Accommodates all payment types - Magstrip, EMV, Contactless/NFC, and mobile wallets along with a 2.8-inch color touch screen capable of signature capture.

Ease of Use

- The lightweight, compact, stylish, and ergonomic balance allows convenient device hand-off to the consumer for PIN entry or other input.
- Horizontal magnetic stripe card reader for optimal card swiping and reading.
- The e285 size is easily able to be dropped in most pockets.

Performance and Durability

- Powerful 300 MHz A9 processing completes transactions quickly.
- High-capacity lithium-ion battery pack (3.8V / 1800mAh with Maxell ICP425262AHR battery cell).
- The USB-C port allows for convenient product charging as well as connection to Android, iOS, and Windows devices.
- Rounded corners to minimize breakage and drop-resistant to 3 feet on concrete surfaces.
- 256MB Flash, 128MB DDR of memory

Security

- PCI PED 5.x approved for debit and other PIN-based transactions.
- Tamper-resistant construction, 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 DUKPT engines.
- EMV L1 and L2
- ISO7816-3, ISO7816-10, and EMV 4.3 standards

Connectivity

USB host/ device port

- Support UART0 software debug (TXD0, RXD0)
- USB 2.0 high speed
- Support 5V/200mA for external USB peripherals
- USB host or device is configured by SW
- Type C USB connector at the bottom
- Communication port for smart device on charge stand (Android, Windows, or iDevice).

Bluetooth (wireless communication)

- Bluetooth 4.1 + EDR compliant
- Support Eddystone + iBeacon
- RF transmitter output power Class 1
- RF receiver GFSK typical -90dBm, /4 PSK typical -90dBm, 8DPSK typical -83dBm
- UART3 interface for SOC communicates to BT

Wi-Fi (wireless communication)

- BT, Wi-Fi, and 3G options
- Wi-Fi dual band supports:
 - 802.11 a/b/g/n/ac connectivity

- 2.4GHz and 5GHz
- Auto-band selection

3G (wireless communication)

- Gemalto EHS6
- GPRS/GSM Class 10
- UMTS/HSPA DL 7.2Mbps, UL 5.7Mbps
- Host interface USB
- Use RINGO for all wake events (new FW update from Gemalto).

2. Device Setup

This section outlines the setup procedures for the e285 covering the following segments:

- [Usage Guidelines](#)
- [Environmental Factors](#)
- [Device Features](#)
- [Removing the Battery Cover](#)
- [Installing Micro SIM and or SAM Cards](#)
- [Using the Battery](#)
- [Connecting to a Computer](#)
- [Conducting Wireless Transactions](#)
- [Using the Smart Card Reader](#)
- [Using the Magnetic Card Reader](#)
- [Using the CTLS Reader](#)

Usage Guidelines

Follow these guidelines when using your e285.

Environmental Factors

- Select a flat support surface, such as a countertop or table, to keep the device safe in between uses.
- 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.
- Do not use the device outdoors.



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.

L'appareil n'est ni étanche à l'eau ni à la poussière et est destiné à une utilisation en intérieur uniquement. Tout dommage causé à l'appareil par une exposition à la pluie ou à la poussière peut annuler toute garantie.

Personal Security Considerations

The e285 is a handover device. Always exercise extreme caution when conducting transactions, especially during PIN entry.

- Hand the e285 directly to the cardholder for PIN entry.
- Encourage the cardholder to hold the e285 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 e285 is a secure product and any tampering may cause the device to cease to function properly.

- 1 Remove and inspect the following items:
 - e285 unit
 - USB-C cable (Lightning USB-C cable is not supported)
- 2 Remove all plastic wrapping from the unit and other components.
- 3 Remove the clear protective film from the unit.



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.

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

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



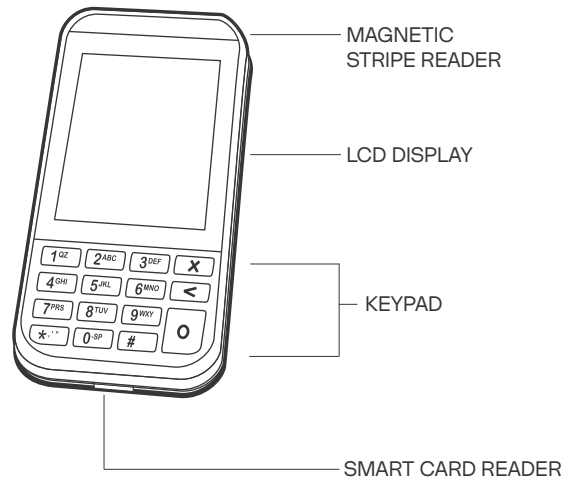
NOTE

Charge the e285 device for eight hours before initial use.

Device Features

Before you continue the installation process, familiarize yourself with the features of the e285. (See below Figure 2).

Figure: 2 e285 Device Features (Front Panel)



- A colored capacitive-touch LCD display.
- Two types of keys:
 - a Telephone style keypad (keypads may vary in style).
 - b Three color-coded function keys below the keypad (from top to bottom: CANCEL, CLEAR, ENTER).
- A smart card reader built into the bottom of the device to process smart card transactions. For directions on how to use a smart card, see [Using the Smart Card Reader](#).
- A magnetic card reader, built into the top part of the device for performing debit or credit card transactions. Swipe the card with the magnetic stripe facing down, away from the display. For directions on how to use a magnetic card, see [Using the Magnetic Card Reader](#).
- A Power LED located on the left side that acts as a power/charging indicator.

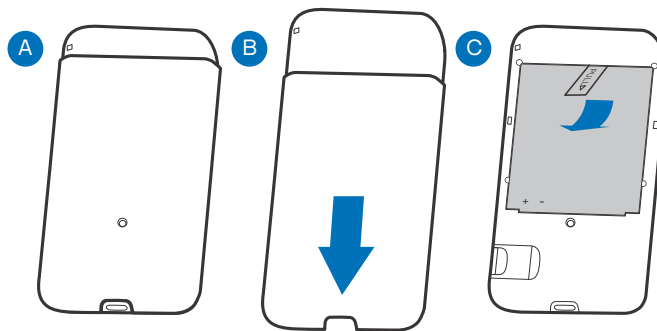
- A CTLS functionality for contactless payments. For directions on how to conduct contactless transactions, see [Using the CTLS Reader](#).
- Micro SIM 1 and SIM 2 compartments built into the bottom of the device inside the back compartment (SIM on 3G version only).
- A micro SAM compartment is built into the bottom of the device inside the back compartment.

Removing the Battery Cover

To remove the battery cover and access the battery, micro SIM, and micro SAM slots, follow these steps:

- 1 Turn off the device.
- 2 Place the device upside down on a soft, clean surface to protect the screen.
- 3 If installed, loosen the retaining screw.
- 4 Slide the battery cover down, away from the magnetic card reader.

Figure: 3 Removing the Battery Cover



Installing Micro SIM and or SAM Cards

The e285 device supports the installation of two GSM SIMs (Subscriber Identity Module) and/or SAM (Security Access Module). Use the following procedures to install a SIM and/or SAM card.



CAUTION

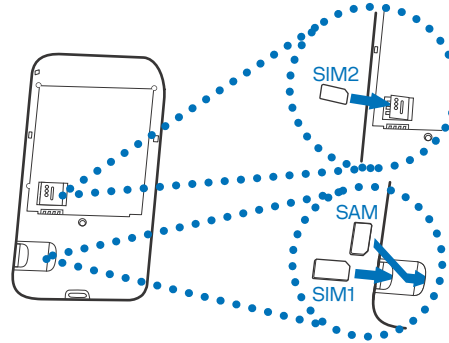
Observe standard precautions when handling electrostatically sensitive devices. Electrostatic discharges can damage this equipment. VeriFone recommends using a grounded anti-static wrist strap.

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

- 1 Follow the steps in [Removing the Battery Cover](#).
- 2 Insert the SIM and/or SAM card with the gold contacts facing down.

- 3 Reinstall the battery cover back and if it was previously installed, reinstall and tighten the retaining screw.

Figure: 4 Inserting the SIM



Initial Battery Charging

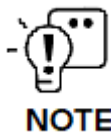
After unpacking your e285 device, connect the power pack to the unit for eight hours or until fully charged.

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

Starting Up and Shutting Down

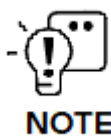
The e285 device starts up differently depending on how it is powered.

- The device starts up automatically when the e285 is connected to a non-battery power source, regardless of the battery charge state.
- To manually power up, hold the green key down for about 4 seconds until the device displays the startup screen.



The 4-second power-up delay prevents device startup if the green key is accidentally held down. The time required to hold the green key down to power up the device is configurable.

The device lights up once the power is on.



The VeriFone copyright screen starts and displays a unique copyright screen. If the terminal comes pre-loaded with an application, this starts after the initial VeriFone copyright screen and usually displays its own copyright screen.

To manually shutdown, hold the red key down for about 4 seconds until the device screen stays blank.



NOTE

The e285 device will only operate when the battery is installed unless connected to AC power, for example, in a stand.

Using the Battery

The e285 device uses a single-cell Li-ion battery which features:

- The battery has 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.
- The battery provides power to the security circuit when the e285 device has no external power source.
- Li-ion batteries are not affected by shallow charging.

Follow these best practices for best function:

- Conserve battery power by turning the e285 device off when not in use.
- Keep the Li-ion battery inserted in the device and power up the device periodically to check the battery charge. Do not let the battery charge fall below 10% for extended periods of time as this may permanently diminish battery capacity.
- Recharge the battery by connecting the USB-C end of the power pack to the device and plugging the other end of the power pack into a wall outlet.



NOTE

The e285 device automatically shuts off when the battery reaches a critically low charge state. If this occurs, the battery must be recharged for a minimum of 1/2 hour before it can power the device. It may take several recharge attempts to reset the safety circuit when charging a battery that has been discharged below this critical state.

The e285 device has two-color LEDs:

- Amber: indicates that it is charging.
- White: indicates that it is fully charged.

Battery Life

Charging and discharging the e285 battery hundreds of times will wear out the battery. Significantly reduced operating times indicate the need for

battery replacement (see [Accessories and Cables](#) for ordering information).



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

Ne jetez pas les piles dans le feu. Les batteries Li-ion doivent être recyclées ou éliminées correctement. Ne jetez pas les batteries Li-ion dans les décharges municipales.

Charging the Battery

After installing the battery, the e285 device can be connected to the optional power pack or charged with a wireless charger.



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.) Obtain the appropriately rated power supply before continuing with troubleshooting.

L'utilisation d'une alimentation électrique mal évaluée peut endommager l'appareil ou l'empêcher de fonctionner comme spécifié. Avant le dépannage, assurez-vous que l'alimentation électrique utilisée pour alimenter l'appareil correspond aux exigences spécifiées au bas de l'appareil. (Voir Spécifications pour les spécifications détaillées de l'alimentation.) Procurez-vous l'alimentation électrique appropriée avant de poursuivre le dépannage.



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

Ne branchez pas le bloc d'alimentation sur une prise extérieure et n'utilisez pas l'appareil à l'extérieur. Au cours d'une transaction, débrancher l'alimentation en retirant la batterie ou en débranchant l'appareil de l'alimentation murale alors que la batterie est très faible peut entraîner la perte des fichiers de données de transaction non encore stockés dans la mémoire de l'appareil.

Charging via the Power Pack

Verifone offers an optional power supply (VPN PWR087-300-01-A) to connect the device directly to a power outlet and charge the battery.

- 1 Insert the USB-C plug into the USB-C port of the e285 device.
- 2 Plug the AC power pack into a wall outlet or powered surge protector.

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

Charging with the Folio

Verifone also offers wireless charging accessories (VPN TBD) that can be connected to the optional power supply (VPN PWR087-300-01-A) to charge the e285 device when fitted with the Folio accessory.

- 1 Insert the USB-C plug into the USB-C port of the wireless charging accessory.
- 2 Plug the AC power pack into a wall outlet or powered surge protector.
- 3 Set the rear cover of the Folio-equipped e285 device against the front face of the wireless charger.



NOTE

When the e285 device is fitted with the Folio accessory, the Folio has an inductive charging that allows charging from any Qi charger.

Verifone provides specific accessories, as well (see [Accessories and Cables](#) and for ordering information).

Upon startup, the e285 device loads its application, displays the Verifone copyright screen and shows a unique copyright screen.



NOTE

If there is no available application in the device, **DOWNLOAD NEEDED** appears on screen after the initial Verifone copyright screen.

Connecting to a Computer

Connect the e285 device to a PC or laptop to download applications.

- 1 Insert the USB-C plug into the USB-C port of the e285.
- 2 Connect the other end of the USB-C plug into the host computer's USB port.

Conducting Wireless Transactions

To conduct a wireless transaction:

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

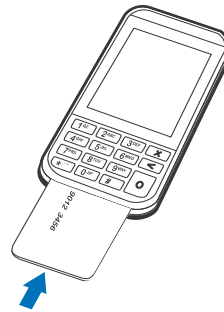
Using the Smart Card Reader

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.

- 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 sits firmly.
- 3 Wait for the application to indicate a completed transaction before removing the card. Premature card removal invalidates the transaction.

Figure: 5 Inserting a Smart Card

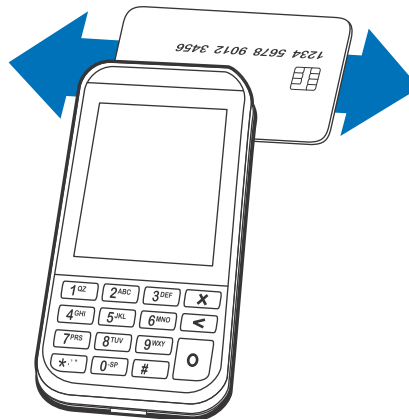


Using the Magnetic Card Reader

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

- 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 top of the device, as shown in the illustration below.

Figure: 6 Using Magnetic Stripe Card



- 3 Swipe the card through the magnetic card reader.

