e315

Installation Guide

VERIFONE
CONFIDENTIAL

DRAFT
REVISION A.1

e315 Installation Guide
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WARNING The e315 uses an internal lithium-ion rechargeable battery. Do not dispose the e315 in a fire. lithium-ion polymer batteries must be recycled or disposed of properly. Do not dispose of lithium-ion polymer batteries in municipal waste sites.

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VeriFone Part Number DOC087-043-EN-A, Revision A.1

This guide is your primary source of information for setting up the e315.

Audience

This guide is useful for anyone installing a e315 device. Basic descriptions of the device features are also provided.

Organization

This guide is organized as follows:

Chapter 1, Device Overview. Provides an overview of the e315.

Chapter 2, Device Setup. Explains how to set up and install an iPod 5 into the e315. It tells you how to select a location, establish power connection, and install the MSAM card.

Chapter 3, Specifications. Discusses power requirements and dimensions of the e315.

Chapter 4, Maintenance. Explains how to maintain your e315.

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 e315, refer to the following set of documents:

e315 Certifications and Regulations Sheet	VPN DOC087-041-EN-A
e315 Quick Installation Guide	VPN DOC087-042-EN-A
e315 Web site	www.paywaremobile.com

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
EMV	Europay MasterCard and VISA
LCD	Liquid Crystal Display
LED	Light Emitting Diode
MRA	Merchandise Return Authorization
MSAM	Micromodule-Size Security Access Module
PED	PIN Entry Device
PIN	Personal Identification Number
SD	Secure Digital
SIM	Subscriber Identity Module
USB	Universal Serial Bus
VPN	VeriFone Part Number
Wi-Fi	Wireless Fidelity

Device Overview

This chapter provides a brief description of the e315, the smallest micro-merchant and convenience retailing mobile payment solution in the industry. This payment solution seamlessly blends the industry standard, secure Vx operating system and Trident hardware architecture with the Apple OS allowing for an endless variety of vertical applications and secure payment combinations to suit today's dynamic and innovative retailing needs. This solution packs a wallop: familiar color/touch display interface via an iPod 5 , blazing fast processor, abundant memory, the latest PCI 2.0 security, integrated 2D barcode scanner, capacitive touch encrypted PINpad, integrated contactless and NFC ready, all in the smallest most versatile form factor available.

The e315 is a portable, battery-powered device designed to fit your hands comfortably and is ideal for consumer-facing and merchant facing retail integrated applications. It features a crisp 128 x 32 display and a spill-resistant capacitive keypad.

NOTE	VeriFone ships variants of the e315 for different markets. Your device may have a different configuration supporting a different Apple device. The following devices may or may not be present: a smart card reader, contactless, barcode scanner.

Figure 1   **The e315 Device**

Features at a glance

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

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

- **Multi-application** operating environment

- **Backward compatibility** with VeriFone VX solutions and the **flexible Apple OS** helps **reduce development cost and time to market**

- **Advanced memory architecture** to meet tomorrow's needs with support for 160 MB standard

- **Multiple connectivity and contactless** options

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

- **Spill-resistant design** prevents liquid from entering the solution by forcing it down and off the front of the device

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

- **Dock mechanism firmly secures the iPod   with the e315 and quickly disengages for easy removal**

- Securely supports and runs **payment** and **value-added applications**

Features and Benefits

The e315 devices provide the right combination of features and functions including a triple-track magnetic-stripe card reader, smart card reader, integrated PIN pad, capacitive touch keypad, monochrome display, 2D barcode reader, and contactless/NFC support.

Exceptional Ease of Use

- The lightweight (less than 1 pound), compact, stylish and ergonomic balance allows convenient device hand-off to the consumer for PIN entry or other input.

- Integration with the Apple OS enables rapid backend development and complex system integration in a short period of time.

- Large, well-placed, capacitive keys provide a continuity of user experience between the e315 and iPod.

- Horizontal magnetic stripe card reader with an enlarged card entrance delivers optimal card swiping and reading without the need to visually guide the card.

- iPod   touchscreen allows for icon-based applications or electronic signature capture support.

- The e315 size is easily able to be dropped in any pocket, or an optional hands-free holster is available that fits the server's or clerk's belt so that the POS device can be quickly removed and easily handed to the customer.

Performance and Durability

- Powerful 400-mHz ARM11 processing completes transactions in seconds.
- High-capacity lithium-ion polymer battery can rapidly charge and offer 10+ hours of PIN pad and host device power.
- Standard micro-USB port allows for convenient product charging, or optional full-featured Gang Charging base allows for multiple units to charge at once.
- Rounded corners and drop resistant to 3 feet on concrete floor to minimize breakage.
- 160 MB of memory standard .

Security

- PCI PED 2.0 approved for debit and other PIN-based transactions
- EMV Level 1 Type Approval
- Tamper-resistant construction, SSL protocols, and VeriShield file authentication
- Supports VeriShield Protect encryption implementations

Contactless Capability

- Advanced contactless architecture that future-proofs investment with a single contactless interface (SingleCI), SoftSAMs, and side-by-side application architecture.
- Large tap zone (CTLS logo) that encompasses the PIN pad optimizes user experience.
- Contactless version accepts EMV in addition to magnetic stripe contactless payments as well as PIN-based transactions.

Device Setup

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

- Selecting a Location
- Unpacking the Shipping Carton
- Examining Device Features
- Installing/Removing an iPod/ into the e315
- Installing/Replacing MSAM Cards
- Connecting the e315 to a Power Source
- Connecting the e315 to a Host Computer via Micro-USB
- Battery Behavior (No Power Cable)
- Conducting Wireless Transactions
- Using a Smart Card to Conduct Transactions
- Using the Magnetic Stripe Reader
- Using the CTLS Reader
- Using the Barcode Reader

Selecting a Location

Use the following guidelines when selecting a location for your e315.

To select a location

- Select a location convenient for both merchant and cardholder.
- Select a location that is far from heavy metal objects.
- Select a location near a power outlet.

WARNING

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

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.

Personal Security Considerations

The e315 is a handover device and personal security is significantly impacted by the carholder entering the PIN.

- Hand the e315 directly to the cardholder for them to enter their PIN.
- Encourage the cardholder to hold the e315 close to avoid allowing others to see 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 e315 is a secure product and any tampering may cause the device to cease to function properly.

To unpack the shipping carton

1   Remove and inspect the following items:

   - e315 unit

   - USB to micro-USB cable

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 damaged or tampered with. The e315 comes equipped with tamper-evident labels. If a label or component appears damaged or if the device appears to have been opened, please notify the shipping company and your VeriFone representative or service provider immediately.

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

NOTE

It is recommended to charge the e315 device for 8 hours before initial use. Do not insert the iPod   during charging.

Examining Device Features

Before you continue the installation process, notice the features of the e315 (see Figure 2 and Figure 3).

NOTE

You need to have an iPod   installed to proceed. For more information, see Installing/Removing an iPod   into the e315.

Front View • The front panel includes the following features:

Figure 2   e315 Device Features

- An **MSAM (Micromodule-Size Security Access Module) compartment**, to support stored-value card programs or other merchant card requirements.

- A **Micro-USB port** is located on the side for data connection and power charging. It is also used to connect the e315 to a host computer through a standard USB to micro-USB cable (VPN CBL000-021-01-A).

- A **magnetic stripe reader**, is built into the right side of the e315. Swipe the card using the proper direction, with the magnetic stripe down and facing inward, toward the device.

NOTE

VeriFone ships variants of the e315 for different markets. Your device may have a different configuration. The following devices may or may not be present: a CTLS reader, smart card reader, or a barcode scanner. However, the basic processes described in this guide remain the same, regardless of device configuration.

Back View   The back panel includes the following features:

Figure 3   e315 Device Features (Back View)

- A 128 x 32 pixel monochrome LCD display

- Two types of keys on the capacitive touch keypad:

  a   A 15-key **keypad**

  b   Three **color-coded function keys** below the keypad

CAUTION

Do NOT paste anything on the keypad surface to avoid malfunction.

- A **2D imager** located on top of the device for scanning barcodes; an audible "beep" indicates a successful scan

- **Action buttons** located on both sides to turn on the barcode reader

- **CTLS LEDs** that acts PIN entry and charging indicators

- A **smart card reader** for performing debit or credit card transactions (See Using a Smart Card to Conduct Transactions)

- A **CTLS functionality** for contactless payments

Installing/ Removing an iPod/ into the e315

You need to install an iPod 5 device into the e315 to perform any payment transaction. You can also install an iPod 5 device into the e315 to synchronize data and download applications.

To install an iPod/ into the e315

1 Hold and secure the e315 with the PIN pad facing down.

2 Firmly grasp the iPod 5 device and position it on top of the e315.

3 The e315 connects iPod 5 device through the Apple Lightning connector. Align the Lightning port on the iPod 5 device with the connector on the e315 then, gently but firmly push the e315 until it locks in place.

Figure 4   Installing an iPod 5 into the e315

To remove an iPod/ from the e315

1 Hold and secure the e315 with the PIN pad facing down.

2 Using your finger, carefully hook the iPod 5 device and then lift upwards to remove the device.

Figure 5   Removing an iPod/ From the e315

Installing/Replacing MSAM Cards

When you first receive your e315, you may need to install an MSAM card or you may need to replace old cards.

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

NOTE Not all applications require the use of an MSAM card.

To install/replace MSAM

1   Unplug any cables or chargers from the e315.

2   Place the MSAM card on top of the tray with the gold contacts facing down.

3   Align the MSAM tray properly into the compartment and gently push the tray until it locks in place.

NOTE Make sure that the MSAM card sits firmly on the tray. If the MSAM card is not installed correctly, the MSAM compartment does not close properly.

Figure 6   Inserting an MSAM Card

Connecting the e315 to a Power Source

Plug the wall-mount charger to an external power source and connect it to the e315 to charge the device.

NOTE

It is recommended to charge the e315 device for 8 hours before initial use. Do not insert the iPod during charging.

The device operates in normal mode during startup or when in use. The device enters power saving mode when it has been idle for more than 60 seconds.

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

Connecting the e315 to a Wall-mount Charger

1 Plug the Apple-certified wall mount charger into a wall outlet or powered surge protector.

2 Insert the micro-USB cable into the port located on the side of the e315.

Figure 7   Connecting the e315 to a Wall-mount Charger

Connecting the e315 to a Host Computer via Micro-USB

Connect the iPod 5 device to a host computer to synchronize handset data and charge the e315.

USB bus power is used to charge both the iPod 5 device and the e315. When the micro-USB cable is plugged into the device, the e315 will be charged completely before the iPod is charged. Transactions are allowed while the e315 charges its battery, but the iPod/ can be operated on its own battery power.

Figure 8   Connecting the e315 to a Host Computer

To connect to a host computer

1   Disconnect power from the host computer.

2   Connect the micro-USB cable into the port located on the left side of the e315.

3   Connect the other end of the micro-USB cable into the host computer's USB port.

4   Reconnect power to the host computer.

Battery Behavior (No Power Cable)

When operating on the e315's battery alone, the e315 allows for power to the iPod 5 device as long as the e315 battery exceeds 80% charge.

At any time during charging, you can override these defaults and enable pass-through power to the iPod by pressing the Enter+3 key combination, but this causes the e315 to shutdown.

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 a Smart Card to Conduct 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.

Figure 9   Inserting a Smart Card

To conduct a smart card transaction

1 Position the smart card with the contacts facing the iPod 5 device.

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.

CAUTION

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

Using the Magnetic Stripe Reader

The e315 supports credit and debit card transactions. The magnetic stripe reader is located on the right side of the e315.

Figure 10   Using Magnetic Stripe Card

To conduct a credit/ debit card transaction

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

2   To ensure a proper read of the magnetic swipe card, the user should insert the magnetic card from the top of the unit, as shown in Figure 10.

3   Swipe the card through the magnetic card reader.

Using the CTLS Reader

The e315 supports contactless credit/debit card transactions. To perform a contactless transaction, gently tap the card or hold the card against the surface of the contactless antenna, which is marked by the CTLS symbol.

Figure 11   Using the CTLS Reader

Using the Barcode Reader

To use the barcode reader, press the Action buttons (see Figure 2 and Figure 3).

Figure 12   Using the Barcode Reader

NOTE

When activated, do not point the barcode reader directly at a person to avoid unnecessary harm or injury.

Specifications

This chapter discusses power requirements, dimensions, and other specifications of the e315 device.

Power

Charging via micro-USB to computer system or Apple-certified power adapter: 5V DC 2 A

Temperature

- **Operating Environment**
  Temperature: -5° to 40°C (23° to 104°F)
  Relative humidity: 5% to 95%; RH non-condensing

- **Non-operating Environment**
  Temperature: -5° to 40°C (-4°F to 122°F)
  Relative humidity: 5% to 95%; RH non-condensing

External Dimensions

- **Length: Please provide info....**

- **Width: Please provide info....**

- **Depth: Please provide info....**

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Maintenance

The e315 device has no user-maintainable parts.

Cleaning the Device   To clean the device, use a clean cloth slightly dampened with water and a drop or two of mild soap. For stubborn stains, use alcohol or an alcohol-based cleaner.

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

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

Device Contacts   Gently swab the contacts with alcohol or contact cleaner to remove the dirt.

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

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

VeriFone Service and Support

For e315 problems, contact your local VeriFone representative or service provider.

For e315 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 a e315, 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 printed labels on the bottom of *each* e315 to be returned:

- Product ID, including the model and part number. For example, "e315" 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 Dept." with the model and part number(s)

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

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

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

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

NOTE

One MRA number must be issued for each e315 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 e315 you are returning for service or repair (device serial numbers are located on the bottom of the unit.

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

- Model(s) returned (model numbers are located on the VeriFone label on the bottom of the e315).

Accessories and Documentation

VeriFone produces the following accessories and documentation for the e315. When ordering, please refer to the part number in the left column.

- VeriFone online store at `www.store.verifone.com`

- USA – VeriFone Customer Development Center, 800-VeriFone (837-4366), Monday - Friday, 7 A.M. - 8 P.M., Eastern time

- International – Contact your VeriFone representative

Accessories

02746-01	VeriFone Cleaning Kit
CBL000-021-01-A	USB to Micro-USB Cable, 1 meter

Documentation

e315 Certifications and Regulations Sheet	VPN DOC087-041-EN-A
e315 Quick Installation Guide	VPN DOC087-042-EN-A
e315 Web site	`www.paywaremobile.com`

Battery Pack Instructions

Dispose of the battery pack in accordance with all national, state, and local laws and regulations as regionally required. Some batteries may be recycled and may be accepted for disposal at local recycling centers.

CAUTION

There is a risk of explosion if the battery is replaced by an incorrect type.

Troubleshooting Guidelines

The troubleshooting guidelines provided in the following section are included to help you install and configure your e315 successfully. Typical examples of malfunction you may encounter while operating your e315 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 e315 comes equipped with tamper-evident labels. The e315 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	Use only a VeriFone-supplied power pack. 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.

Device Does Not Start

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

Device Display Does not Show Correct/ Readable Info

- Recharge the battery.
- Connect the e315 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.

Blank Display

When the e315 display screen does not show correct or clearly readable information:

- Check device power connection.
- Remove and reapply power to the device. To do this, press and hold the power/reset button.
- Check if the iPod is properly installed.
- If the problem persists, contact your local VeriFone service provider.

Keypad Does Not Respond

If the keypad does not respond properly:

- Check the device display. If it displays the wrong character or nothing at all when you press a key, follow the steps outlined in Transactions Fail To Process.
- Check if the iPod is properly installed.
- If the problem persists, contact your local VeriFone representative.

CAUTION

Do NOT paste anything on the keypad surface to avoid malfunction.

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 e315 card reader, the black magnetic stripe on the card should face down and inward, toward the iPod and must be inserted from the top of the device (see Figure 10).

Check the Smart Card Reader

- Perform a test transaction using several different smart cards to ensure the problem is not a defective card.
- Ensure that the card is inserted correctly and that the card is not removed prematurely.
- Ensure the MSAM cards are properly inserted (see Installing/Replacing MSAM Cards).
- Contact your VeriFone distributor or service provider.

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Federal Communication Commission Interference Statement

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

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

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

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Radiation Exposure Statement:

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

The exposure standard for wireless device employs a unit of measurement known as the Specific Absorption Rate, or SAR. The SAR limit set by the FCC is 1.6W/kg. *Tests for SAR are conducted using standard operating positions accepted by the FCC with the device transmitting at its highest certified power level in all tested frequency bands.