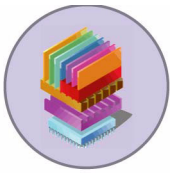
VeriFone



VERIX
OPERATING ENVIRONMENT

SOFTPAY
E-PAYMENT APPLICATION

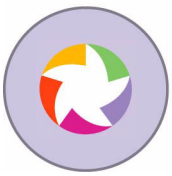
VERIX DEVELOPER TOOLKIT
DEVELOPMENT TOOLS

VERISHIELD
SECURITY ARCHITECTURE

OMNI 37XX
HAND-OVER-COUNTER MULTI-APPLICATION APPLIANCES

OMNI 33XX
MULTI-APPLICATION APPLIANCES

OMNI 3600
HAND-HELD RADIO MODEM APPLIANCES



VERICENTRE
APPLIANCE MANAGEMENT SUITE

Omni 3600

Reference Manual

Part Number 22379, Revision A

Omni 3600 Reference Manual

© 2003 VeriFone, Inc.

All rights reserved. No part of the contents of this document may be reproduced or transmitted in any form without the written permission of VeriFone, Inc.

The information contained in this document is subject to change without notice. Although VeriFone has attempted to ensure the accuracy of the contents of this document, this document may include errors or omissions. The examples and sample programs are for illustration only and may not be suited for your purpose. You should verify the applicability of any example or sample program before placing the software into productive use. This document, including without limitation the examples and software programs, is supplied “As-Is.”

VeriFone, the VeriFone logo, Omni, VeriCentre, Verix, and ZonTalk are registered trademarks of VeriFone. Other brand names or trademarks associated with VeriFone’s products and services are trademarks of VeriFone, Inc.

All other brand names and trademarks appearing in this manual are the property of their respective holders.

Comments? Please e-mail all comments in this document to Tell_Us_More@VeriFone.com

VeriFone, Inc.
2455 Augustine Drive
Santa Clara CA 95054-3002

www.verifone.com

Part Number 22379, Revision A

CONTENTS

CHAPTER 1
Omni 3600 Terminal and Omni 3600 Base Installation

Select a Location 7
- Omni 3600 Terminal 7
- Omni 3600 Base 7
- Environment 7
- Convenience 8

Omni 3600 Terminal 8
- Unpack the Shipping Carton 8
- Terminal Features 10
- Power Port 11
- Smart Battery 11
- Turn On/Off the Omni 3600 Terminal 14
- Paper Installation 14
- Install/Replace MSAM Cards 16
- Install/Replace SIM Card (GSM models) 18
- Wireless Transactions 20
- Smart Card Reader Transactions 20
- Magnetic Card Reader Transactions 20
- Antenna (Some Wireless Models) 21

Omni 3600 Base 22
- Unpack the Shipping Carton 23
- Omni 3600 Base Features 23
- Power Connection 26
- Omni 3600 Terminal Docking 27
- Spare Smart Battery Pack 27
- Omni 3600 Base Communications Ports 28

CHAPTER 2
Using the Terminal Keys

Data Entry Modes 32
The Keypad 32
- Function Key Descriptions 33

Programmable Function (PF) Key Descriptions 35

CHAPTER 3
System Mode

When to Use System Mode 37
Local and Remote Operations 37
Verifying Terminal Status 38
Entering System Mode 38
File Groups 38
Passwords 39
- System Password 39
- File Group Passwords 39

System Mode Menus 40
- System Mode Procedures 41
- Enter and Exit System Mode 42
- System Mode Menu 1 43
- System Mode Menu 2 44

System Mode Menu 3 47
Edit Keyed Files 52
System Mode Menu 4 52
System Mode Menu 5 54
System Mode Menu 6 55
System Mode Menu 7 56

CHAPTER 4
Performing Downloads

Downloads and Uploads 57
Download Methods 58
Download Tools 58
Download Content 59
Full and Partial Downloads 60
Omni 3600 Download Differences 62
Support for Multiple Applications 62
Use of RAM and Flash Memory 63
Redirection of Files During Application Downloads 64
File Authentication Requirements 69
Support for File Compression 76
Effect of Downloads on Existing Files and Data 76
Set Up the Download Environment 77
Cable Connection for Direct Downloads 78
Telephone Line Connection for Telephone Downloads 80
Connections for Back-to-Back Downloads 80
Direct Application Downloads 80
Hardware Checklist 80
Software Checklist 80
Checklist for Effects on Files and Settings in the Receiving Terminal 81
Direct Application Download Procedure 81
Direct Operating System Downloads 85
Hardware Checklist 85
Software Checklist 85
Checklist for Effects on Files and Settings in the Receiving Terminal 86
Direct Operating System Download Procedure 86
Download by Telephone 88
Hardware Checklist 88
Software Checklist 88
Telephone Downloads Procedure 89
Back-to-Back Application Downloads 91
Hardware Checklist 91
Software Checklist 91
Checklist for Effects on Files and Settings in the Receiving Terminal 92
Back-to-Back Application Download Procedure 92

CHAPTER 5
File Authentication

Introduction to File Authentication 97
The VeriFone Certificate Authority 97
Special Files Used in the File Authentication Process 98
How File Authentication Works 99
Planning for File Authentication 104
Digital Certificates and the File Authentication Process 107
File Authentication and the Omni 3600 File System 111

The FILESIGN.EXE File Signing Tool 114
FILESIGN.EXE System Requirements 114
Operating Modes for FILESIGN.EXE 115
Command-Line Entries for FILESIGN.EXE 116
Command-Line Mode Syntax Example 117
FILESIGN.EXE Graphical Interface Mode 117

CHAPTER 6
Troubleshooting and Service

Smart Card 119
System Messages 119
Use Remote Diagnostics to Identify Problems 119
Troubleshooting 119
Terminal Display Does Not Show Correct or Readable Information 120
Smart Battery Will Not Charge 120
Telephone Line Connection Does Not Work Properly 120
Printer Does Not Work 120
Serial Port Does Not Work 121
Terminal Does Not Process Transactions 121
Keypad Does Not Respond 122
Cleaning and Care 122
Base Contacts 122
Smart Card Reader 123
VeriFone Service and Support 123
Return a Terminal, Omni 3600 Base, or Smart Battery 123
Specifications 125
Power Requirements 125
Environmental 125
Dimensions 125
Weight 125
Accessories and Documentation 126
How to Order 126

APPENDIX A
System Messages

APPENDIX B
ASCII Table

APPENDIX C
Omni 3600 Base Unit Port Pinouts

RS232 Port 141
Telco Port 141
Telset Port 141
Barrel Connector Polarity 142

GLOSSARY 143

INDEX 149

CHAPTER 1

Omni 3600 Terminal and Omni 3600 Base Installation

This chapter describes how to set up and install the Omni 3600 terminal and Omni 3600 base, including how to:

- protect the terminal from adverse Environmental conditions,
- install and maintain the Smart Battery,
- establish communications connections through the Omni 3600 Base Communications Ports, and
- connect optional peripheral devices through the Omni 3600 base (see Peripheral Devices).

NOTE This installation procedure is also available for end users in the *Omni 3600 Installation Guide* (VeriFone part number 22060), which can be downloaded at: http://www.verifone.com/support/index.html

Select a Location

This section provides tips on using and protecting your Omni 3600 terminal, and location recommendations for the Omni 3600 base.

Omni 3600 Terminal

The Omni 3600 is a portable terminal for performing transactions remotely. Since it is a portable unit, location is not a factor however, follow the rules established in the Environment and Convenience sections.

Omni 3600 Base

A prime location for the Omni 3600 base is a counter or other flat surface that provides easy access to a power outlet and phone jack. Also, follow the rules established in the Environment and Convenience sections.

Environment

WARNING **Do *not* leave this terminal in a non-climate-controlled vehicle.** The Omni 3600 terminal is highly sensitive to temperature extremes. Subjecting the terminal to temperatures outside the stated operating range can void your warranty.

- Do not use the Omni 3600 terminal or Omni 3600 base where there is moisture or high humidity, chemicals or oils, or excessive heat or dust.
- Avoid locations near electrical appliances or other devices that emit excessive voltage fluctuations or electrical noise (for example, air conditioners, electric motors, neon signs, high-frequency or magnetic security devices, or computer equipment).

- Never place the terminal in direct sunlight.

CAUTION Do *not* use the Omni 3600 terminal or Omni 3600 base outdoors. They are for indoor use only, and are not waterproof or dustproof. Damage to the unit from exposure to sun, rain, or dust may void your warranty.

- Keep the Omni 3600 terminal and Omni 3600 base away from anything that radiates heat, such as a stove or motor.

WARNING Do *not* use the Omni 3600 terminal or Omni 3600 base near water, including a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool. Avoid using these products during electrical storms.

Convenience

Omni 3600 Terminal

Keep the Omni 3600 terminal with you to perform transactions. When plugging the Omni 3600 terminal into the power pack, ensure that the unit is placed close enough to a power outlet so that the power cable readily reaches the unit. For safety, do *not* string the power cable in a walkway or place across a walkway on the floor.

Omni 3600 Base

Locate the Omni 3600 base so that you can readily dock the Omni 3600 terminal on the cradle for recharging and downloading. Again, for safety, ensure that the power cable readily reaches the Omni 3600 base unit, so as not to trip or interfere in any way in a busy location.

Omni 3600 Terminal

This section discusses the features of the Omni 3600 terminal, including

- providing power to the Omni 3600 terminal,
- charging the smart battery,
- installing paper,
- installing MSAM cards, and
- completing magnetic card and smart card transactions.

Unpack the Shipping Carton

Open the shipping carton and carefully inspect the contents for possible tampering or shipping damage (Figure 1).

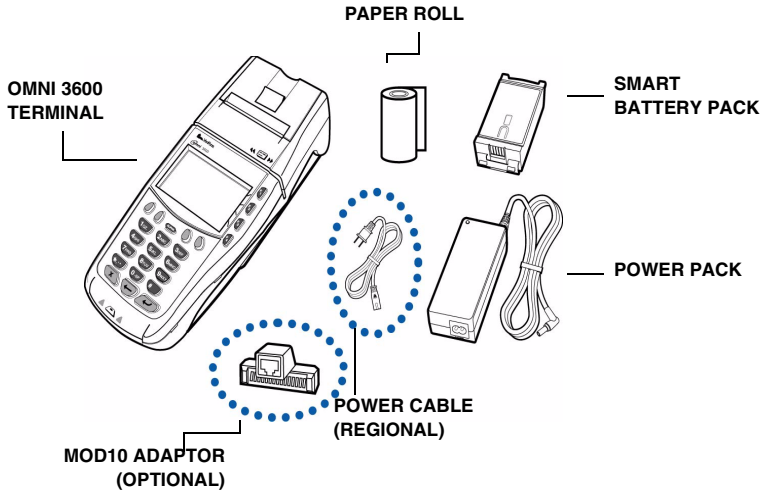


Figure 1 Omni 3600 Terminal Shipping Carton Components

1 Remove the following items:

- Omni 3600 terminal
- Power pack and power cable (if present)
- Roll of thermal printer paper
- Battery pack
- MOD10 adaptor (optional)

2 Remove all plastic wrap from the Omni 3600 terminal and components.

3 Remove the clear protective film from the display lens.

WARNING

Do *not* use a Omni 3600 terminal or Omni 3600 base that has been damaged or tampered with.

Terminal Features

Figure 2 illustrates the physical features of the Omni 3600 terminal.

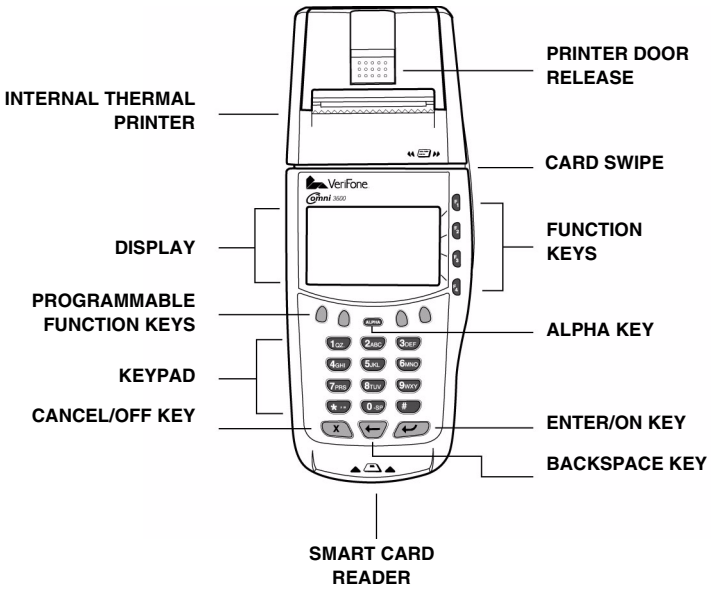


Figure 2 Omni 3600 Terminal Features

Notice the following features of the Omni 3600 terminal shown in Figure 2:

- The display
- Four types of keys:
  - A 12-key, telephone-style keypad
  - Eight function keys: four function keys, labeled F1 to F4, right display; four unlabeled, *programmable* function (PF) keys above the keypad
  - Three keys (icons at left) under the keypad (left-to-right: CANCEL/OFF, BACKSPACE, ENTER/ON)
  - An ALPHA key center above the keypad (see ALPHA Key, page 33)
- The magnetic card swipe, above the display. The icon at left shows proper card orientation
- Smart card reader, in the front of the unit. The icon at left shows proper card orientation
- The internal thermal printer and door release
- The smart battery pack installed in back of unit (Figure 4)
- A SAM (security access module) access door, underneath the battery (Figure 9). The Omni 3600 terminal contains three micromodule-sized SAM (MSAM) cardholders to support multiple stored-value card programs or other merchant cards

The Omni 3600 terminal is equipped with a tamper-evident label (on a screw hole on the case bottom).

Power Port

On the back of the Omni 3600 is one port—the *power* port. Use this port to connect the Omni 3600 to the power pack to recharge the battery through the unit

Connect Power Pack

To connect the Omni 3600 terminal to power:

1. Insert the round barrel connector (Figure 3) into the power port on the back of the terminal.
2. Insert the power cable into the power pack.
3. Plug the power pack into a wall outlet or surge protector.

NOTE

Install a power surge protector to protect against possible damage caused by lightning strikes and electrical surges.

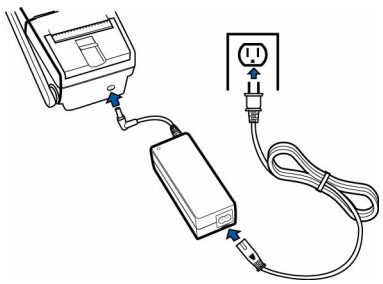


Figure 3 Connect Omni 3600 Terminal Power Pack

WARNING

Do not plug the power pack into an outdoor outlet.

Smart Battery

The Omni 3600 wireless terminal uses an Li-ion *smart* battery (see Accessories and Documentation for ordering information). The internal logic of the smart battery prevents both overcharging and undercharging (a fault condition in which the battery level goes well below the minimum acceptable charge and the battery becomes unusable).

CAUTION

Note that a new Li-ion battery's full performance is achieved only after two or three complete charge and discharge cycles.

On initial use, allow the Omni 3600 smart battery to charge 4 hours, then *fully discharge* during normal operation, to ensure reliable battery operation.

The following are features of the smart battery:

- Two Li-ion cells
- A fuel gauge module
  - monitors state of charge (voltage and current),
  - communicates with the terminal (charge parameters and alarms to indicate full discharge),
  - determines full charge capacity (on charge cycle and uninterrupted discharge cycle), and
  - automatically shuts down when cell voltage is extremely low.
- A safety circuit
  - prevents cell damage from overcharge/over-discharge,
  - activates when the battery is left in an unused terminal for extended periods, and
  - resets when battery voltage reaches a preset threshold during the charge cycle.

NOTE Conserve battery power by turning the Omni 3600 terminal off when not in use. If the terminal is not to be used for several days, remove the battery from the terminal as it continues to discharge even when the terminal is turned off.

Refer to Spare Smart Battery Pack for smart battery instructions for the Omni 3600 terminal on the Omni 3600 base.

NOTE The smart battery pack *must* be installed and holding a minimum of a 1% charge to operate the Omni 3600 terminal.

Smart Battery Installation

The smart battery installs in a slot on the back of the terminal, as shown in Figure 4. The locking tab clicks when the battery is in place. The slot is *keyed*, so that there is only one way to insert the battery.

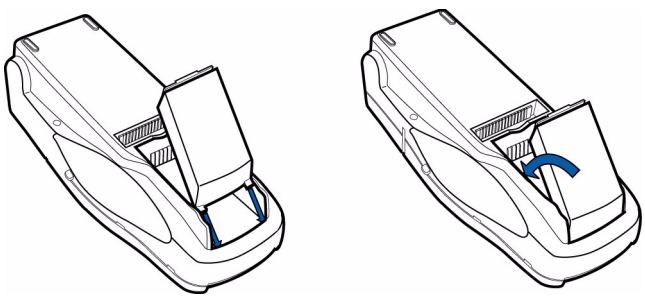


Figure 4 Install the Smart Battery

Smart Battery Removal

To remove the smart battery, press the locking tab at the top of the battery and pull the smart battery from its slot.

Smart Battery Charging

On initial use, the smart battery must be fully charged and *fully discharged* through normal operation. After unpacking your Omni 3600 terminal, install the battery and connect the power pack to the unit for 4 hours. Disconnect the power pack and allow your Omni 3600 terminal to remain on until the smart battery completely discharges. Reconnect the power pack to the unit and allow the smart battery to recharge a maximum of 4 hours.

It is also recommended that the smart battery receive a periodic full discharge. To ensure a full discharge, use the unit until the battery is fully drained.

To determine the charge state of the battery, push the “test button” icon (shown in Figure 5) on the bottom of the battery. The bar LED status indicators on the battery each indicate 25% of the charge state. When the battery charge state reaches 10%, the E LED (Figure 5) blinks, indicating a low-charge state. The battery charge state displays at the bottom of the first copyright screen when the terminal is turned on.

NOTE Conserve battery power by turning the Omni 3600 terminal off when not in use. If the terminal is not to be used for several days, remove the battery from the terminal as it continues to discharge even when the terminal is turned off.

The smart battery has a safety circuit to protect the Li-ion cells from overcharging and over-discharging. If the battery is over-discharged, the safety circuit shuts down the battery and none of the indicator LEDs (see Figure 5) on the battery pack blink. The battery must then be recharged to restore operation.

NOTE The Omni 3600 terminal automatically shuts off when the smart battery reaches the *critically low* charge state. If this occurs, the smart battery must recharge a minimum of 1/2 hour before it can power the terminal. **It make take several recharge attempts to reset the safety circuit** when charging a smart battery that has reached a critically low charge state.

If the Omni 3600 terminal is already running an application (for example, SoftPay), a battery status indicator may appear on the display.

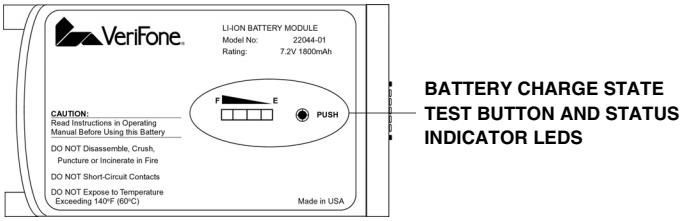


Figure 5 Smart Battery Charge Indicator LEDs and Test Button

NOTE

It is recommended that you keep a spare, charged smart battery available.

Smart Battery Life

To ensure that you get the longest possible performance from the smart battery, it must be allowed to fully discharge periodically. The smart battery can be charged and discharged hundreds of times, but will eventually wear out. When operating times are noticeably shorter than usual, it is time to buy a new battery (see Accessories and Documentation for ordering information).

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

Turn On/Off the Omni 3600 Terminal

When the smart battery completes its initial charge, turn on the Omni 3600 terminal by pressing the green ENTER/ON key (icon at left) for approximately 3 sec. The display screen lights and displays the initial VeriFone copyright screen. If an application is loaded in the terminal, it starts after the initial VeriFone copyright screen and displays a unique (copyright) screen. If no application is loaded in the terminal, `DOWNLOAD NEEDED` appears on screen after the initial VeriFone copyright screen.

Turn off the Omni 3600 terminal by pressing the red CANCEL/OFF key (icon at left) continuously until the cancel tone is heard (approximately 4 sec.). First a series of beeps is heard, then the cancel tone. The unit then shuts off.

Paper Installation

The internal thermal printer uses a roll of single-ply, thermal-sensitive paper 58 millimeters (2.25 inches) wide and 25 meters (82 feet) long. A pink *out-of-paper* indicator line appears on the edge of the paper approximately 18 inches before the end of the roll. After this line appears, there is enough paper remaining on the roll to conclude at least one transaction.

WARNING Poor-quality paper may jam the printer. Order high-quality paper from VeriFone; refer to the ordering process listed in Accessories and Documentation.

CAUTION Store thermal paper in a dry, dark, cool place. Handle thermal paper carefully; impact, friction, high temperatures, humidity, light, and oils affect the color and storage characteristics.

To install the paper roll in the internal thermal printer:

1. Lift paper roll cover tab to unlock the printer door (Figure 6).

2 Rotate the printer door up and back. Note that the door is hinged; it is not necessary to remove it from the unit.

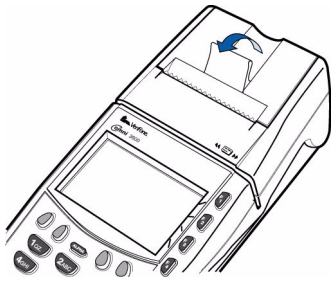


Figure 6 Open the Printer Cover

3 Loosen the glued leading edge of the paper from the roll.

4 Hold the paper roll so paper feeds from the *bottom* (Figure 7) and pull approximately two inches of paper free of the roll.

5 Drop the paper roll into the printer tray, allowing the free paper to extend outside the printer door (Figure 7).

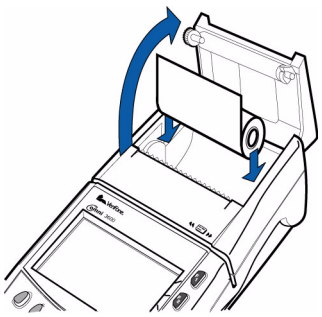


Figure 7 Load Paper

6 Close the cover by gently pressing directly on the paper roll cover tab until it clicks shut. Allow a small amount of paper to extend outside the cover, as shown in Figure 8.

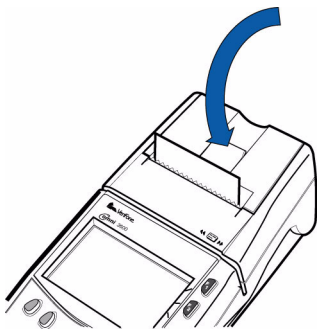


Figure 8 Close the Printer Cover