





# PayPal Reader PPR-MSR User Guide © PayPal Inc.

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PayPal Reader PPR-MSR USER GUIDE

#### PayPal Rader PPR-MSR User Guide

Version	Data	Change description
1.0.0	05.07.2024	Release version





## **Contents**

REGULATORY	6
FCC NOTICE	ε
PREFACE	7
Audience	-
Organization	
RELATED DOCUMENTATION	
CONVENTIONS	-
TABLE 1 DOCUMENT CONVENTIONS	8
OVERVIEW	g
PAYPAL READER PPR-MSR	c
Features At a Glance	9
FEATURES AND BENEFITS	10
DEVICE SPECIFICATIONS	11
DEVICE OPERATION	12
GETTING STARTED	14
SETUP	15
SYSTEM MODE	15
E-LABEL	15
INFO VERSION	
INFO HARDWARE	
INFO KEYS	
TEST DISPLAY	
TEST KEYBOARD	
TEST MSR	
TEST SCRKEYS DOWNLOAD	
CLEAR DEA KEYS	
EXIT	
APPLICATION DOWNLOAD MODE (Firmware/Application update via USB interface)	
COMMUNICATION PARAMETERS	
SETTINGS IN APPLICATION(DEPENDS OF THE APPLICATION)	
OPERATING MODE	
-	





DISPLAY	18
DISPLAY INDICATIONS	19
BLUETOOTH PAIRING	20
UPDATE FIRMWARE AND APPLICATION WITH USING FIRMWARE API	20
MAGNETIC CARD READER USE	22
TO CONDUCT A MAGNETIC CREDIT/DEBIT CARD TRANSACTION	
SMART CARD READER USE	23
To Conduct a Smart Card Transaction	23
CONTACTLESS CARD READING	24
To Conduct a Contactless Credit/Debit Card Transaction	24
TROUBLESHOOTING GUIDELINES	26
BLANK DISPLAY	26
KEYPAD DOES NOT RESPOND	
Transactions Fail To Process	
Check Magnetic Card Reader	
Check Smart Card Reader	
MAINTENANCE AND CLEANING	
MAIN BATTERY REPLACEMENT	
SAFETY	
SERVICE AND SUPPORT	
SEDVICE DETURNS	າດ





#### **REGULATORY**

#### **FCC NOTICE**

**FCC ID: 2BGST-PAYPALREADER** 

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 or more 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.

Caution: Any changes or modifications to this device not explicitly approved by manufacturer could void your authority to operate this equipment. 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.

#### **Specific Absorption Rate (SAR) information:**

This PayPal Reader PPR meets the government's requirements for exposure to radio waves. The guidelines are based on standards that were developed by independent scientific organizations through periodic and thorough evaluation of scientific studies. The standards include a substantial safety margin designed to assure the safety of all persons regardless of age or health. FCC RF Exposure Information and Statement the SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. Device types: PayPal Reader PPR has also been tested against this SAR limit. This device was tested for typical body-worn operations with the back of the PayPal Reader PPR kept 0mm from the body. To maintain compliance with FCC RF exposure requirements, use accessories that maintain an 0mm separation distance between the user's body and the back of the PayPal Reader PPR. The use of belt clips, holsters and similar accessories should not contain metallic components in its assembly. The use of accessories that do not satisfy these requirements may not comply with FCC RF exposure requirements, and should be avoided.

PayPal Reader PPR-MSR USER GUIDE



v1.0.0 Page 6 of 28



#### **PREFACE**

This guide is the primary source of information for setting up and installing PayPal Reader PPR-MSR.

#### **Audience**

This guide provides simple descriptions of PayPal Reader PPR-MSR features, as well as basic information for anyone installing and configuring PayPal Reader PPR-MSR.

### **Organization**

This guide is organized as follows:

Chapter 1, Overview. Provides an overview of the PayPal Reader PPR-MSR.

<u>Chapter 2, Specifications.</u> Discusses power requirements and dimensions of PayPal Reader PPR-MSR, etc.

<u>Chapter 3, Setup.</u> Explains setup and installation of PayPal Reader PPR-MSR. This chapter tells how to establish connections with other devices.

<u>Chapter 4, Maintenance and Cleaning.</u> Explains maintenance of PayPal Reader PPR-MSR.

<u>Chapter 5, Service and Support.</u> Provides information on contacting your PayPal representative or service provider and information on how to order accessories or documentation from PayPal.

<u>Chapter 6, Troubleshooting Guidelines.</u> Provides troubleshooting guidelines should you encounter a problem in terminal installation and configuration.



v1.0.0



#### Related Documentation

To learn more about PayPal Reader PPR-MSR, refer to the following set of documents:

- PayPal Reader PPR-MSR Physical Security Features
- PayPal Reader PPR-MSR Firmware API Specifications
- PayPal Reader PPR-MSR Software Design Specifications

### **CONVENTIONS**

Various conventions are used to help you quickly identify special formatting. <u>Table 1</u> describes these conventions and provides examples of their use.

**Table 1 Document Conventions** 

Convention	Meaning	Example
Blue	Text in blue indicates terms thatare cross	See Guide Conventions
	references.	
Italics	Italic typeface indicates book titles or	You <i>must</i> not use this unit
	emphasis.	underwater.
1	The Information icon is used to highlight	PayPal Reader PPR-MSR is
	important information.	using USB communication
A	The caution symbol indicates hardware or	The unit is not waterproof or
AL	Software failure, or loss of data.	dustproof, and is intended for
		indoor use only.
0	The warning symbol is used as a warning	Due to risk of shock do not
	when bodily injury might occur.	use the terminal near water.



v1.0.0 Page 8 of 28



#### **Overview**

This chapter provides a brief description of PayPal Reader PPR-MSR device.

### PayPal Reader PPR-MSR

The PayPal Reader PPR-MSR unit is a handheld PIN pad with an integrated smart, magnetic stripe and contactless card reader an optional wireless connectivity designed to be used with a variety of PDA's, offering advanced security and smart card processing capabilities.

PayPal Reader PPR-MSR supports both symmetric encryption algorithms (DES, 3DES, and AES) and asymmetric encryption (RSA). This device internally manages simultaneous multiple keys through either Master Session- or DUKPT-based processes, and offers high performance smart card processing, as well as support for the new generation of 3-volt cards.

The PayPal Reader PPR-MSR sleek and stylish ergonomic.



PayPal ships variants of PayPal Reader PPR-MSR unit for different markets. Your unit may have a different configuration, such as a Bluetooth module, etc. However, the basic processes described in this guide remain the same, regardless of configuration.



#### **Features At a Glance**

- Delivers **power** and **usability** in a **small convenient** hand-held design.
- **Security** architecture meets specifications for PIN-entry devices (PED) and sophisticated **file authentication**.

The PayPal Reader PPR-MSR provides the right combination of features and functions in a small stylish device that fits in the palm of your hand. This includes a magnetic stripe card reader, contactless card reader, smart card reader, an integrated PIN pad, and an optional wireless connectivity.

PayPal Reader PPR-MSR USER GUIDE





#### **Features and Benefits**

#### **Exceptional Ease of Use**

- Bold, ergonomic design is sleek, stylish, and lightweight for conveniently handing the unit to the consumer for PIN entry.
- Intuitive interface and large, colored control keys simplify training and reduce support requests.
- Highly readable display handles multiple languages.

#### **Critical Security Protection**

- Incorporates tamper-detection circuitry to resist unauthorized intrusion and supports a broad spectrum of hardware and software-based security features.
- Integrated security modules simultaneously support sophisticated encryption (AES, DES, 3DES, RSA) and key management schemes, including single and 3DES Master Session, single, and 3DES Derived.

#### **Strong Feature Set**

- Primary smart card reader support for synchronous and asynchronous smart cards.
- Support for international character sets and Unicode standard.
- PayPal Reader PPR-MSR has received EMV Level 1 approval for smart card solutions.
- PayPal Reader PPR-MSR has received EMV Level 2 approval for smart card solutions.
- PayPal Reader PPR-MSR has received PCI PTS 6.2 SRED Security Certification.



v1.0.0 Page 10 of 28



# **Device Specifications**

Processor ARM Cortex® M4 Security Microcontroller

Memory 32KB I&D-Cache

1MB Internal RAM

**8KB OTP** 

**Application Memory** 

Display

8/16MB Serial Flash \*(option)

Type – LCD, 262K colors
Size – 3.2 inches

• Resolution – 240 x 320 pixels

• Capacitive touchscreen

• Backlight

**Keypad** • ON / OFF key

• 10 numeric keys

• 2 functional keys

**Magnetic Card Reader** 

(For MSR version)

**Smart Card Reader** 

**Contactless Card Reader** 

for payment applications (option)

• 3-track bi-directional reading

• ISO 7810, 7811 and 7813

ISO7816, EMV L1 certified

AMEX ExpressPay

• Discover D-PAS

• MasterCard Contactless

VISA PayWave

• China Union Pay

• JCB

**Contactless Card Reader** 

• NFC-A/ISO 14443 Type-A

• NFC-B/ISO 14443 Type-B

• NFC-F/Felica

• NFC-V/ISO 15693

Battery

Rechargeable lithium-ion polymer battery 3.7V, 620mAh

Connectivity

• USB

- Device

• BLE 5.1

• Wireless

- WiFi module 802.11 b/g/n

• Serial pass-through dock connector

**Audio indication** 

Speaker (power 0.5W)

OS compatibility

iOS, Android, Windows

Reliability

• 500 000 chip card cycles

• 1 000 000 magnetic card swipes

Certifications

CE, FCC, EMV Level 1, EMV Level 2, EMV Level 1 Contactless, PCI PTS 6.2

Dimensions (LxWxH),

132.3 x 69.2 x 15

Weight, g

145g

PayPal Reader PPR-MSR USER GUIDE



v1.0.0 Page 11 of 28



Environmental Operating: -10°C to +45°C / 5 to 90% RH

Storage:  $-20^{\circ}$ C to  $+70^{\circ}$ C / 5 to 90% RH

**Drop Test** 

Power Supply • 5V through USB C

• 5V through Docking station

Accessories • Docking station

# **Device Operation**

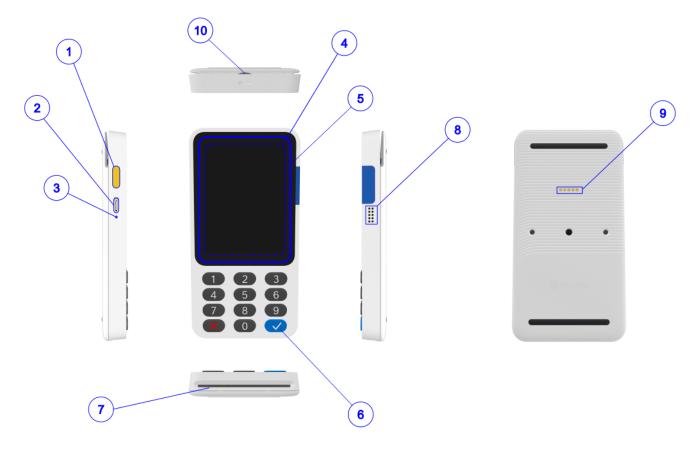


Figure 1

- 1. On/Off button
- 2. Communication port (USB)
- 3. LED indication
- 4. RFID Antenna





- 5. LCD Display
- 6. Keypad
- Chip card reader 7.
- 8. Speaker
- 9. Dock connector (provides serial communication and charging)
- Magnetic card reader *10.*



Page 13 of 28 v1.0.0



#### **GETTING STARTED**

PayPal Reader PPR-MSR has rechargeable lithium-ion polymer battery. The battery can be charged from USB power adapter connected to USB port or when is attached to Docking station.



Figure 2



PayPal Reader PPR-MSR is non removable, for replacing please see "Main battery replacement".



v1.0.0 Page 14 of 28



### Setup

When a PayPal Reader PPR-MSR is switched on and the Power button is kept pressed, on the display will be shown the name and the version of the Secure Boot Loader and the firmware.

Service personnel can access two different system modes: "System Mode" and "Application Download Mode".

#### SYSTEM MODE

To enter System mode on the PayPal Reader PPR-MSR, the button 2 has to be maintained pressed while switching on the PINPAD. A characteristic sound is played and on the display appears the "SYSTEM MODE" menu.

The following keyboard buttons can be used in service mode:

move through the list one position upwards

2: move through the list one position downwards

: selection of the active option

: return to previous level or exit the service mode

The following menu options can be selected in service mode:

INFO VERSION

**INFO HARDWARE** 

**INFO KEYS** 

**TEST DISPLAY** 

**TEST KEYBOARD** 

**TEST SCR** 

**COMMUNICATION MODE** 

#### E-Label

User must be able to access the information in no more than three steps in a device's menu. The actual steps are:

- 1. Hold the 2 button and power on the device to enter "SYSTEM MODE"
- 2. Enter "INFO VERSION" by pressing V button
- 3. With buttons and 2 move upwards and downwards through the menu to find "FCC ID"

#### INFO VERSION

Shows the serial numbers and the versions of the detached program modules:





DEV SN - PayPal Reader PPR-MSR serial number

USIP SN - USIP serial number

USIP VER - USIP version

ISBL VER - USIP Boot loader version

HAL VER - USIP Hardware Abstraction Layer (HAL) version

LOAD VER - Secure Boot Loader (SBL) version and name

FW VER - Firmware version and name

PROM VER - Prompts version

APPL VER - Application version and name

PKFA VER - Version of the public key used for firmware authentication

PKAA VER - Version of the public key used for application authentication

PKKA VER - Version of the public key used for manufacturing keys authentication

#### INFO HARDWARE

Gives information about the status of the following hardware properties:

BATT: indicates the voltage of the battery

VBUS: indicates if external power supply is plugged in

CHARGE: indicates if the battery is charging

#### INFO KEYS

Shows the version of the following keys:

AIK keys version

#### **TEST DISPLAY**

Performs a display test. Initially a blank screen is displayed. When OK button is pressed once, completely black screen is displayed. When OK button is pressed twice, checkmate background is displayed, its contrast can be changed with the UP and DOWN buttons.

To exit the test at any time the button C has to be pressed.

#### TEST KEYBOARD

Performs a keyboard test. At first the symbols of all the keys appear on the display. Pressing a key makes its corresponding symbol to disappear. The test ends when all the buttons have been pressed.

#### **TEST MSR**

Performs magnetic card reading test. The test waits for a card to be inserted. On a successful card reading, the tracks data are displayed.

PayPal Reader PPR-MSR USER GUIDE



v1.0.0 Page 16 of 28



#### **TEST SCR**

Performs smart card reading tests. On the display appears a menu with the supported options. To perform a test, insert a card in the card slot and select the corresponding menu option:

1: RESET: performs card reset and returns the ATR

2: GET CHALLENGE: calls the command GET CHALLENGE and returns a random number

#### KEYS DOWNLOAD

To download the Acquirer Initial Keys (AIK) the PINPAD has to be set in Keys Download Mode, in which it exchanges information in a secure way through the USB interface using proprietary communication protocol. To exit the mode the "C" button has to be pressed.

#### **CLEAR DEA KEYS**

Deletes the customer's DEA key hierarchy.

#### **EXIT**

Exit the service menu forwarding the control to the application.

#### **APPLICATION DOWNLOAD MODE (Firmware/Application update via USB interface)**

To enter application download mode on the PayPal Reader PPR-MSR, the button has to be maintained pressed while switching on the PINPAD. A characteristic sound is played and on the display appears the name and version of the Secure Boot Loader.

When application download is initiated, on the display is shown the progress in percentages of the downloading process.

To exit the mode, press or Power buttons.

The Application download process shall not be interrupted to prevent memory corruption. If the buttons or Power are pressed during the downloading process, the application integrity checking will fail on booting up and process will have to be repeated.

#### **COMMUNICATION PARAMETERS**

The default USB VC serial port communication parameters are the following:

115200bps 8bit 1 stop bit

no parity





#### SETTINGS IN APPLICATION(DEPENDS OF THE APPLICATION)

RS SPEED 115200\*

USB MODE DISABLE\*/DEVICE/HOST

BLUETOOTH Settings

Mode: ENABLE/DISABLE

ADDR: MAC ADDRESS of the Bluetooth

NAME: Bluetooth name

PASS: Bluetooth password

PAIR: DISCOVERABLE/HIDDEN

**AUTO: ENABLE/DISABLE** 

VER: Bluetooth firmware version

MASTER RESET: return to default settings

**FW UPDATE** 

AUTO OFF 60min\*/120min/180min/240min/DISABLE/1min//5min/10min/

15min/30min/45min

#### \*Default settings

#### **OPERATING MODE**

To start Operating mode on the PayPal Reader PPR-MSR, quick press the power button. A characteristic sound is played and on the display appears the clock and battery status. For entering in "SYSTEM MODE", need to be pressed button 3.

The following keyboard buttons can be used in System mode:

1: move through the list one position upwards

2: move through the list one position downwards

: selection of the active option

: return to previous level or exit the service mode

### **Display**

The device is equipped with 3.2" inch color display.

PayPal Reader PPR-MSR USER GUIDE



v1.0.0 Page 18 of 28



### **Display Indications**

PayPal Reader PPR-MSR USER GUIDE

Battery indication for discharged battery



Battery indication for fully charged battery



Outside power from USB cable – "Plug"



Battery is charging from UBS cable or Power station – "Flash"



"USB" - connection with USB





### **Bluetooth Pairing**

Turn on PayPal Reader PPR-MSR and Commercial off-the-shelf/smart device with Bluetooth capabilities. In smart device enter to Bluetooth menu and locate PayPal Reader PPR-MSR (used Bluetooth name in Air is PayPal Reader PPR-MSR serial number). Press on pair and confirm if passkey is same on both devices.

### **Update Firmware and Application with using Firmware API**

Loaded Firmware and Application on PayPal Reader PPR-MSR can be updated via Application which is using Firmware API. Pair PayPal Reader PPR-MSR to another device via External Interfaces (Please refer to device specification section "Connectivity"). Run the Application\* on COTS (smart device) and press "Update device firmware".

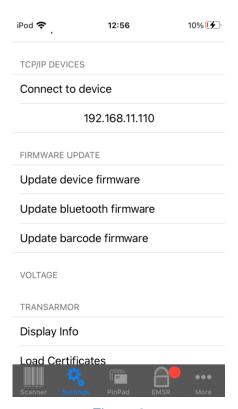


Figure 3

PayPal Reader PPR-MSR USER GUIDE



v1.0.0 Page 20 of 28

<sup>\*</sup> In order to use the PayPal Reader PPR-MSR functions with COTS(smart device), special software must be used. Please contact your distributor in order to get the latest demo application and SDK.







# **Magnetic Card Reader Use**

The magnetic card transaction procedure can vary depending on the application loaded on the PayPal Reader PPR-MSR. Verify the proper procedure with your application provider before performing a magnetic card transaction.

### To Conduct a Magnetic Credit/Debit Card Transaction

- 1 Position a magnetic card as shown in Figure 6.
- 2 Insert it into the MS card reader slot and then quickly swipe it.
- 3 Hand PayPal Reader PPR-MSR to the customer for signature or PIN entry

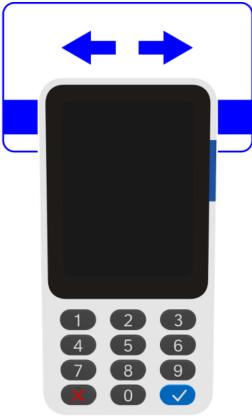


Figure 4





### **Smart Card Reader Use**

The smart card transaction procedure can vary depending on the application loaded on the PayPal Reader PPR-MSR. Verify the proper procedure with your application provider before performing a smart card transaction.

#### To Conduct a Smart Card Transaction

- 1 Position a smart card with the gold contacts facing upward.
- 2 Insert it into the ICC card reader slot in a smooth, continuous motion until it seats firmly.
- 3 Hand PayPal Reader PPR-MSR to customer for PIN entry
- 4 Remove the card when the display indicates the transaction is completed.



Figure 5



v1.0.0





Leave the smart card in the card reader until the transaction is completed. Premature removal can void the transaction.

### **Contactless Card Reading**

The contactless card transaction procedure can vary depending on the application loaded on the PayPal Reader PPR-MSR. Verify the proper procedure with your application provider before performing a contactless card transaction.

In order to use the Contactless card reading function, special software must be used. Please contact your distributor in order to get the latest demo application and SDK.

#### To Conduct a Contactless Credit/Debit Card Transaction

- 1. Place a contactless card to shown on the PayPal Reader PPR-MSR display contactless logo.
- 2. Remove the card when the display indicates the transaction is completed.



PayPal Reader PPR-MSR USER GUIDE

v1.0.0 Page 24 of 28



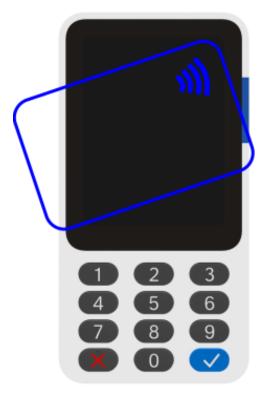


Figure 6





### **Troubleshooting Guidelines**

This chapter lists typical examples of malfunction you may encounter while operating your PayPal Reader PPR-MSR unit and steps you can take to resolve them.

The troubleshooting guidelines provided in the following section are included to assist successful installation and configuration of PayPal Reader PPR-MSR units. If you are having problems operating your PayPal Reader PPR-MSR unit, please read through these troubleshooting examples. If the problem persists even after performing the outlined guidelines or if the problem is not described, contact your local PayPal representative for assistance.



The PayPal Reader PPR-MSR unit contains no user-serviceable parts. Do not, under any circumstance, attempt to disassemble the unit. Perform only those adjustments or repairs specified in this guide. For all other services, contact your local PayPal service provider. Service conducted by parties other than authorized PayPal representatives may void any warranty.

### **Blank Display**

When the PayPal Reader PPR-MSR unit display does not show correct or clearly readable information:

- Check battery power.
- If the problem persists, contact your local PayPal service provider.

### Keypad Does Not Respond

If the keypad does not respond properly:

- Check the display. If it displays is not blank, follow the steps outlined in Transactions Fail To Process.
- If the problem persists, contact your local PayPal representative.

#### Transactions Fail To Process

There are several possible reasons why the unit may not be processing transactions. Use the following steps to troubleshoot failures.

### **Check 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 (see <u>Magnetic Card Reader Use</u>).
- If the problem persists, contact your local PayPal representative.

#### **Check 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 (see Smart Card Reader Use).
- If the problem persists, contact your local PayPal representative.



Due to risk of shock or damage, do not use the PayPal Reader PPR-MSR unit near water, including a bathtub, wash bowl, kitchen sink or laundry tub, in a wet basement, or near a swimming pool.

### Maintenance and Cleaning

PayPal Reader PPR-MSR units have no user-serviceable parts.

To clean the unit, 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.

Do not attempt to clean the card readers. Doing so can void any warranty. For card reader service, contact your PayPal distributor or service provider.



Never use thinner, trichloroethylene, or ketone-based solvents – they can deteriorate plastic or rubber parts. Do not spray cleaners or other solutions directly onto the keypad or display.

### Main battery replacement

To replace the main battery of PayPal Reader PPR-MSR please contact with your your local PayPal representative or service provider.

### Safety

- To prevent damage to your device's parts or internal circuits, do not use it in dusty, smoky, damp, or dirty environments or near magnetic fields.
- Using an unapproved or incompatible power adapter, charger, or battery may damage your device, shorten its lifespan, or cause a fire, explosion, or other hazards.

PayPal Reader PPR-MSR USER GUIDE



v1.0.0 Page 27 of 28



- Keep the device and battery away from excessive heat and direct sunlight. Do not place them on or in heating devices, such as microwave ovens, stoves, or radiators.
- Dispose the battery, and accessories according to local regulations. They should not be disposed of in normal household waste. Improper battery use may lead to fire, explosion, or other hazards.
- Do not use, store or transport the device where flammables or explosives are stored (in a gas station, oil depot, or chemical plant, for example). Using your device in these environments increases the risk of explosion or fire.

### Service and Support

For PayPal Reader PPR-MSR problems, product service, and repair information, contact your local PayPal representative or service provider.

International – Contact your local PayPal distributor

#### Service Returns

PayPal Reader PPR-MSR USER GUIDE

All customers, please contact your local PayPal Inc. representative or distributor for assistance with your service, return, or replacement.

