ViVOpay™ VP8300
User Manual

80158509-001 Rev. G
1 February 2022

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FCC Regulatory Compliance

This device complies with Part 15 of the FCC Rules:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation of the device.

Notices: Class B Equipment

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.

This device complies with part 15 of the FCC rules. Operation is subject to 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.

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 the 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.
- Changes or modifications to the VP8300 not expressly approved by ID TECH could void the user's authority to operate the device.

Cautions and Warnings

Warning: Avoid close proximity to radio transmitters, which may reduce the capabilities of the reader.

Revision History

Date	Rev	Changes	By
02/01/2022	G	Reimplemented revision history. Added Table of Contents. Updated mounting information. Updated Hyperlinks.	CB

Table of Contents

1. Introduction

The ViVOpay™ 300 is ID TECH's compact 3-in-1 card reader (capable of magstripe, contact EMV, or contactless payments) for countertop and kiosk scenarios. The VP8300 is EMV L1/L2-certified and designed for low cost, high reliability, and maximum compatibility with popular contactless payment technologies (including Apple Pay, Apple VAS, Google Pay, Google SmartTap, and Samsung Pay). The unit combines sleek design with high reliability and meets or exceeds the most exacting industry standards for security.

The VP8300 incorporates the proven EMV L2 kernel of ID TECH's popular VP3300-series card readers. Developers can integrate VP8300-series products into EMV-ready terminal systems with minimal effort using ID TECH's Universal SDK, available for Windows, Android, or iOS.

1.1. Major Features of the VP8300

- Micro-USB port for communications and power.
- Magnetic stripe support: ISO 7810/ISO 7811, Hi-Co+Lo-Co Magnetic, JIS1/JIS2.
- MSR is bidirectional, reading up to 3 tracks of data at once.
- ICC support: EMV Level 1 and EMV L2 approvals.
- Contactless transaction support via Near Field Communication (NFC).
- LED status indicator.
- Audio feedback.
- Field upgradable firmware.
- Standby mode for low power consumption.
- Compact, sturdy, ergonomic design.
- Weighted base and no-skid footpads for countertop use.
- TDES and AES encryption support.
- DUKPT key management.
- Support for remote key injection.
- Software Development Kits for Windows, Android, iOS.
- One-year manufacturer's warranty.
- Supports 16 contact and 16 contactless AIDs, for a total of 32 AIDs.

1.2. Magnetic Stripe Features

- ISO 7810 / ISO 7811
- AAMVA format
- JIS I / II
- Single / Dual / Triple Track Support
- Bi-directional reading
- Samsung Pay MST

1.3. ICC Contact Card Features

- EMVCo Contact Level 1 & 2 compliant

1.4. Contactless (NFC) Features:

- ISO 14443 Type A&B
- ISO 18092 (P2P)
- MasterCard® MCL (Formerly PayPass)
- Visa payWave/VCPS
- Visa IRWIN
- Discover® DPAS
- American Express® ExpressPay
- MIFARE
- Apple Pay
- Apple VAS Loyalty
- Samsung Pay NFC & MST
- Google Pay
- Google SmartTap Loyalty

1.5. Other Agency Approvals and Compliances

- CE (EN55022/EN55024, Class-B)
- FCC (Part 15, Class-B)
- RoHS (DIRECTIVE 2011/65/EU)
- REACH
- EMV Contact L1&L2
- EMV Contactless L1

1.6. Before Using the VP8300

The ViVOpay VP8300 is designed to operate in conjunction with certified third-party payment software and compatible hosts, such as USB-capable tablets, PCs, and smartphones. Before connecting the VP8300 to a host machine, make sure to obtain, install, and activate any necessary software application(s) according to the instructions provided by the payment application service or software provider. After installing and updating software, connect the VP8300 to the host via the micro-USB cable.

1.7. Device Physical Specifications

Physical Dimensions	127x141x45mm
Structure Material	Plastic, PC UL 94V-0
Housing Color	Black / Silver
Texture	MT11010
Weight	300 g

Physical layout is further described in the drawings below.

2. Mounting

The ViVOpay VP8300 can be affixed to a countertop, kiosk, or other mounting surface. The rear holes are 80mm apart; the front holes are 70mm apart.

Note: DO NOT apply the included rubber feet included with the VP8300 when using the #8-32 mounting inserts.

VP8300 top cover: ICC slot at top

VP8300 base layout (dimensions in mm)

Four #8-32 (threaded inserts) for mounting
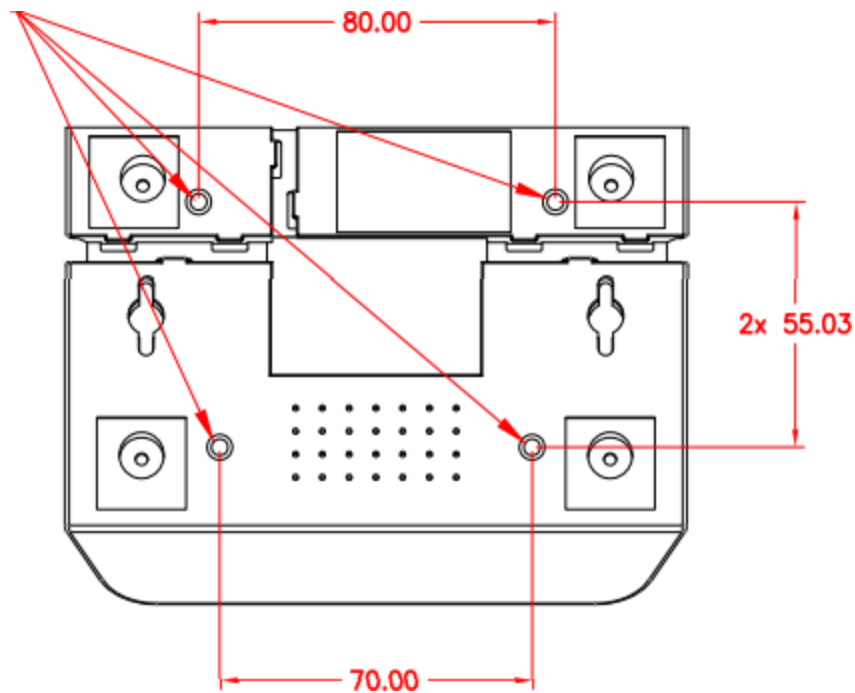
2.1. Power Requirements

Item	Specification	Note
Power Input: Voltage in	USB DC +5V	Normal operating input range
Power Consumption	RUN <500mA(Max)	Contactless operating status
	RUN < 90mA(Max)	MSR/ICC operating status
	Suspend mode <2mA(Max)	USB suspend current

2.2. Operation and Storage Environment

Item	Specification	Note
Operating Temperature	0 °C to 55 °C	1. Non-condensing. 2. Product operation temperature is limited to the range for the reason of the constraint of Li-Battery specification.
Storage Temperature	-20 °C to 60 °C	1. Non-condensing. 2. Product storage temperature is limited to the range for the reason of the constraint of Li-Battery specification.
Operating Humidity	5% to 95%	Non-condensing
Storage Humidity	5% to 95%	Non-condensing

2.3. LED Status and Audible Beeper During Transactions and Operation

Device Status	LED Indication	Audible Beeper
Run Mode	Left LED Flash 300ms on/5s off	
Contactless Read Successful	All 4 LEDs flash Once	1 longer beep
Contactless Read Failed		2 short beeps
ICC is being Processed	Left LED flashes: 500ms on/off, DO NOT remove card	
Magnetic Stripe Read Successful	All 4 LEDs flash Once	1 longer beep
Magnetic Stripe Read Failed		2 short beeps

2.4. Durability and Reliability

Item	Specification
Magnetic Head	1,000,000 swipes minimum
Rail	1,000,000 swipes minimum
Smartcard connector	500,000 cycles minimum
Drop Test	Can withstand 4 ft. drop on concrete, 6 surfaces and 4 corners (2 cycles)

2.5. MSR

Item	Specification	Note
Head	3 tracks read head	
Head material	Permalloy	
Lead Out	FPCB	
Slot width	1.2mm±0.05mm	
Media Thickness	0.76mm (tolerance ±0.08mm) Max 0.89mm	ISO 7810 ID-1 card
Card Formats	ISO-7811	
Media Densities	75 bpi, 210 bpi	
Media Coercively	250 to 4200 Oersted	
Reading Direction	Bi-direction	
Swipe Speed	3 to 45 inches per second	
Low Amplitude Reading	>30 % @210 bpi, >40% @75 bpi	

2.6. Smart Card

Item	Specification
Slot width	0.9mm±0.05mm
Media Thickness	0.76mm (tolerance ±0.08mm)
Card Formats	ISO-7816
Contact force	0.2 to 0.6N
Technology	Friction type

2.7. Structural Specifications

Item	Specification
Physical Dimensions	127x141x45mm
Structure Material	Plastic, PC UL 94V-0
Housing Color	Black / Silver
Texture	MT11010
Weight	300g

3. Software Development Support

ID TECH offers a Universal SDK (available for iOS, Android, or Windows platforms) to enable rapid application development with VP8300 as the target device. The programming languages supported include Objective C (on iOS), Java (on Android), and C# (on Windows). There is also a C++ version of the SDK, with a Java JNI bridge. Whether the target platform is mobile or desktop, the Universal SDK includes rich, powerful libraries that make communication with VP8300 comparatively easy while greatly facilitating debugging.

Normally, development of applications that take advantage of VP8300 capabilities can be done in a high-level language like Java or C# (using convenience objects and data structures), obviating the need to send raw byte streams directly via USB-HID. However, if necessary, it is possible to communicate with the device directly (that is, to send raw firmware commands over USB). For a command reference for VP8300-series products, consult the *NEO Interface Developers Guide* (IDG), P/N 80139403-001, available on request.

3.1. USDK Demo App

The Universal SDK comes with a rich, fully featured demo app. The SDK includes complete source code for the demo app. ID TECH also offers a standalone version of the USDK Demo on the ID TECH Knowledge Base.

To use the USDK Demo app:
1. Plug a VP8300-series device into the host using a USB-to-micro-USB cable
2. Open **UniversalSDKDemo.exe**.

The VP8300 will appear in the list of devices (left) as "VP3300."

The USDK Demo App displays available commands in a command tree:
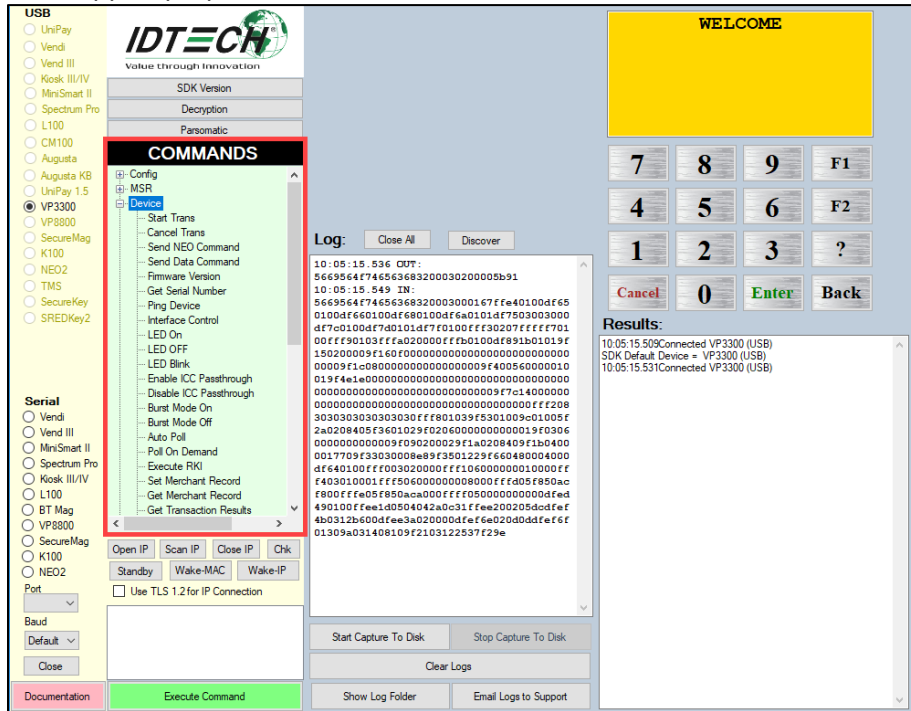
Single-click on a command to populate the center panel of the window with optional settings relevant to the command (for example, **Amount** and **Start EMV Additional Tags**). In some cases, the app provides text fields, allowing users to enter custom values:
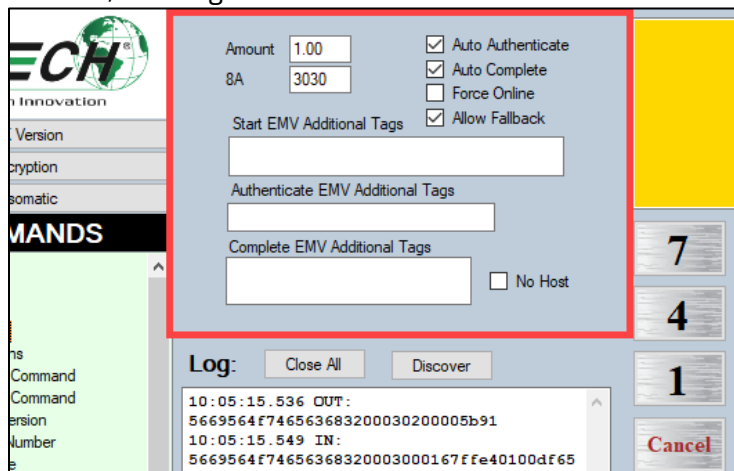
To execute a command, double-click it in the command tree or click **Execute Command**:
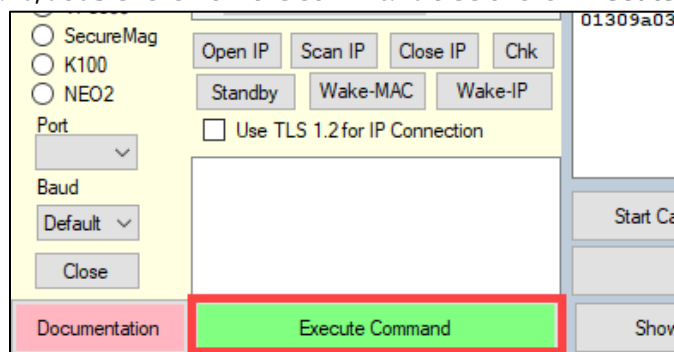
The command executes in real time and a data trace appears automatically in the center and/or right-hand panels. Use the **Clear Logs** button to clear both panels:

For more detailed instructions on how to use the demo app, click the pink Documentation button in the lower left corner of the main window.

4. Customer Support

To obtain technical support for the ViVOpay VP8300, consult our [Knowledge Base](), or submit a question to support@idtechproducts.com (sending an email to this address automatically generates a customer support ticket). If possible, include the device's model number and serial number.