ViVOpay™ VP8300
User Manual

80158509-001 Rev. A
2/5/2018

Warranty Disclaimer

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.

Introduction

The ViVOpay™ VP8300 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 VP8300-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.

Major Features of the ViVOpay™ 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.

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

ICC Contact Card Features
- EMVCo Contact Level 1 & 2 compliant.

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

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

Before You Start Using the VP8300

Your 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 you connect the VP8300 to a host machine, you should obtain, install, and activate any necessary software application(s) according to the instructions provided by your payment application service or software provider. Then connect the VP8300 to the host through the micro-USB cable (not included).

Device Physical Specifications

No.	Item	Specification
1	Physical Dimensions	127x141x45mm
2	Structure Material	Plastic, PC UL 94V-0
3	Housing Color	Black / Silver
4	Texture	MT11010
5	Weight	300 g

Physical layout is further described in the drawings shown below.
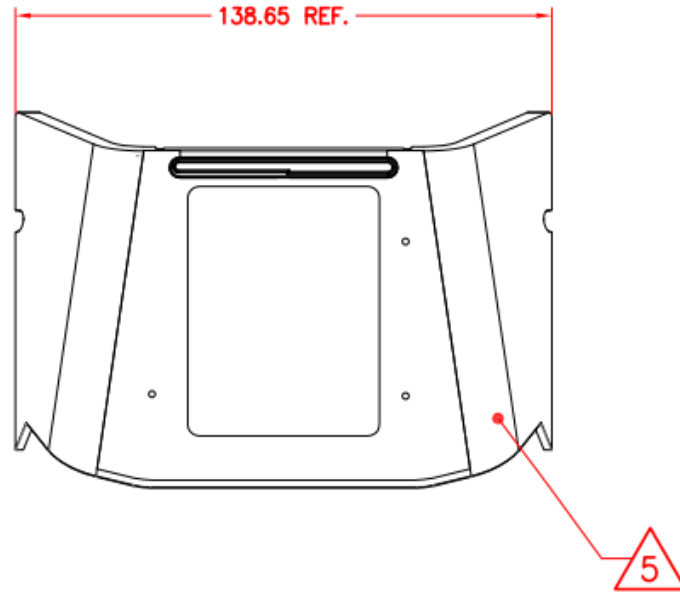
VP8300 top cover: ICC slot at top
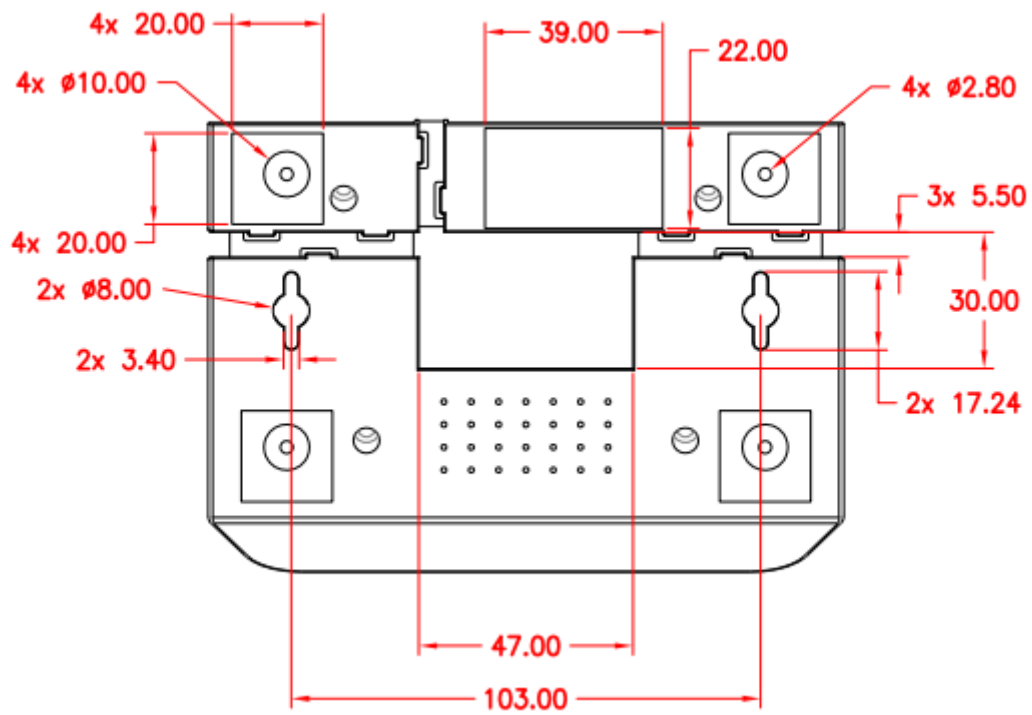
VP8300 base layout (dimensions in mm)

Power Requirements

No	Item	Specification	Note
1	Power Input:Vin	USB DC +5V	Normal operating input range

2	Power Consumption	RUN <500mA(Max)	Contactless operating status
		RUN < 90mA(Max)	MSR/ICC operating status
		Suspend mode <2mA(Max)	USB suspend current

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

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

Durability and Reliability

No	Item	Specification
1	Magnetic Head	1,000,000 swipes minimum
2	Rail	1,000,000 swipes minimum
3	Smartcard connector	500,000 cycles minimum
4	Drop Test	Can withstand 4 ft. drop on concrete, 6 surfaces and 4 corners (2 cycles)

MSR

No	Item	Specification	Note
1	Head	3 tracks read head	
2	Head material	Permalloy	
3	Lead Out	FPCB	
4	Slot width	1.2mm±0.05mm	
5	Media Thickness	0.76mm (tolerance ±0.08mm) Max 0.89mm	ISO 7810 ID-1 card
6	Card Formats	ISO-7811	
7	Media Densities	75 bpi, 210 bpi	
8	Media Coercivity	250 to 4200 Oersted	
9	Reading Direction	Bi-direction	
10	Swipe Speed	3 to 45 inches per second	
11	Low Amplitude Reading	>30 % @210 bpi, >40% @75 bpi	

Structural Specifications

No	Item	Specification
1	Physical Dimensions	127x141x45mm
2	Structure Material	Plastic, PC UL 94V-0
3	Housing Color	Black / Silver
4	Texture	MT11010
5	Weight	300g

Smart Card

No	Item	Specification
1	Slot width	0.9mm±0.05mm
2	Media Thickness	0.76mm (tolerance ±0.08mm)
3	Card Formats	ISO-7816
4	Contact force	0.2 to 0.6N
5	Technology	Friction type

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 your 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. Nevertheless, if you need to communicate with the device directly (so as to send raw firmware commands over USB), it is possible to do so. For a command reference for VP8300-series products, consult the *NEO Interface Developers Guide* (IDG), P/N 80139403-001, available on request.

Demo App

The Universal SDK comes with a rich, fully featured demo app. Source code for the demo app is included with the SDK.

To use the demo app: On Windows, plug your VP8300-series device into the host using a USB-to-micro-USB cable (not included), then double-click the *UniversalSDKDemo.exe* file and allow a few seconds for the main window to appear (see illustration below).

The Demo App displays available commands in a command tree, as shown in the screen shot below. Single-click on a command to populate the center panel of the window with optional settings relevant to the command in question (e.g., "Amount" and "Start EMV Additional Tags"). In some cases, text fields will appear, allowing you to enter custom argument values. When you are ready to execute the command, double-click it in the command tree (or use the green Execute button at the bottom). 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.)
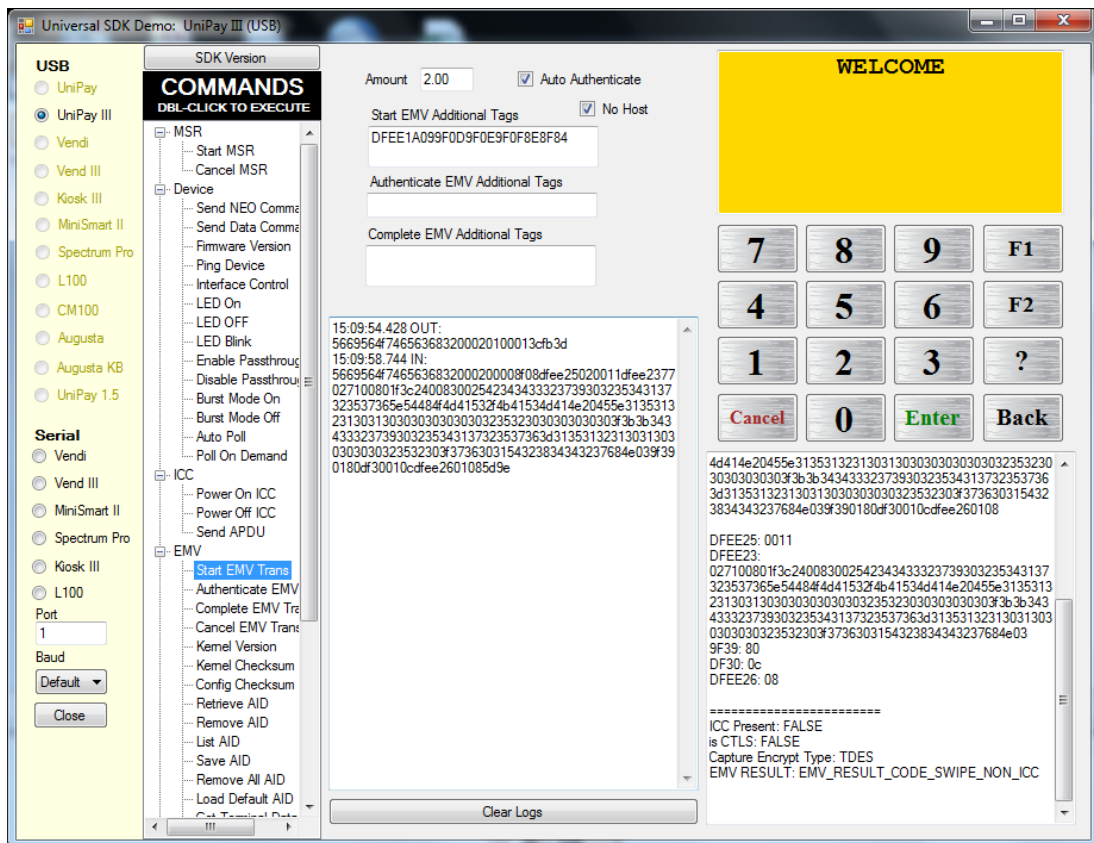
Customer Support

To obtain technical support for your ViVOpay VP8300, consult our Knowledge Base at https://atlassian.idtechproducts.com/confluence/display/KB/Knowledge+Base+-+Home (no registation required), or submit a question to support@idtechproducts.com. Submitting an e-mail automatically creates a ticket in our bug-tracking system, which will result in followup action the same day, in most cases (but no later than the next business day). If you can, include the model number and serial number of your device.

Revision History

Revision	Date	Description of Changes	By
A	2/7/2018	Initial release	KT