# VP4880, VP4880C, VP4880E

# User Manual

**80149509-001-A**

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**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.

## Cautions and Warnings

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

## Introduction

VP4880 is ID TECH's family of ultra-compact, EMV L1/L2-certified contactless card readers, designed for low cost, high reliability, and maximum compatibility with existing contactless payment technologies (including Apple Pay, Android Pay, and Samsung Pay).

The VP4880 family includes models with and without contact-EMV capability, as well as with and without magnetic swipe reader (MSR) functionality. (See the chart shown further below.) The economical VP4880C, which offers contactless-transaction capability *without* contact-EMV or MSR, provides an extremely cost-effective way for merchants to add tap-and-go capability to existing payment options, without the need to replace other hardware. Likewise, for merchants who already have MSR capability but need to add contact-EMV and NFC, the VP4880E offers an economical way to do so.

The VP4880 series incorporates the proven EMV L2 kernel of ID TECH's popular UniPay III card reader. Developers can integrate VP4880-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 VP4880 Family

- Micro-USB port for communications and power.
- Magnetic stripe support (VP4880 only): ISO 7810/ISO 7811, Hi-Co+Lo-Co Magnetic, JIS1/JIS2.
- MSR (VP4880 only) is bidirectional, reading up to 3 tracks of data at once.
- ICC support (VP4880 and VP4880E): EMV Level 1 and EMV L2 approvals. All L1 & L2 on the device.
- Contactless transaction support via Near Field Communication (NFC): all models.
- LED status indicator.
- Audio feedback.
- Field upgradable firmware.
- Standby mode for low power consumption.
- Compact and ergonomic design to integrate with a variety of devices.
- Available with a sturdy stand, for tabletop use.
- TDES and AES 128 encryption support.
- DUKPT key management.
- Software Development Kits for Windows, Android, iOS.
- One-year manufacturer's warranty.

| Feature | VP4880 | VP4880C | VP4880E |
|---|---|---|---|
| Contactless reader (NFC capability) | ✓ | ✓ | ✓ |
| ICC reader with landing contacts and EMV L1 and L2 certification | ✓ | | ✓ |
| 3-track MSR (magstripe reading) | ✓ | | |
| EMVCo Contactless L1 and major card brand contactless certifications (L2's) | ✓ | ✓ | ✓ |
| Compact Size | ✓ | ✓ | ✓ |
| 4 green LEDs for the contactless indication | ✓ | ✓ | ✓ |
| Audio feedback to signal good/bad card reads, etc. | ✓ | ✓ | ✓ |
| TDES and AES encryption algorithms | ✓ | ✓ | ✓ |
| Supports ID TECH standard TR31 (and optional TR34) Remote Key Injection | ✓ | ✓ | ✓ |
| Supports multiple key slots | ✓ | ✓ | ✓ |
| RoHS and REACH compliant | ✓ | ✓ | ✓ |
| 1 year manufacturer warranty | ✓ | ✓ | ✓ |

## Magnetic Stripe Features (VP4880 only)

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

## ICC Contact Card Features (VP4880, VP4880E)

- 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
- Samsung Pay NFC
- Android Pay
- Google Wallet / Softcard SmartTap

## Before You Start Using VP4880

Devices in the VP4880 family are compact micro-USB devices for handling contactless transactions. (See chart above for differences between models.) Your VP4880-series device is designed to operate in conjunction with certified third party payment software and compatible hosts, such as USB-equipped tablets, PCs, and smartphones. Before you connect VP4880 to the host, install and activate the software application service according to the instructions provided by your payment application service or software provider, then connect the VP4880 to the host through a micro-USB cable (not included).

## LED Status During Transactions and Operation

ICC processing: Top LED flashes amber during transaction, do not remove card.

ICC process successful: Top LED displays solid green (2 seconds), please remove card.

Magnetic stripe read successful: Top LED displays solid green (2 seconds.

Magnetic stripe read failed: Top LED displays solid red (2 seconds).

Contactless read successful: All 4 LEDs on the unit's face (contactless antenna side) flash green simultaneously

## Physical Specifications (VP4880, VP4880C, VP4880E)

| No. | Item | Specification |
|---|---|---|
| 1 | Physical Dimensions | 64mm x 49mm x 14.5mm(LxWxH) |
| 2 | Structure Material | Plastic, PC UL 94V-0 |
| 3 | Housing Color | Black /White |
| 4 | Texture | MT11010 |
| 5 | Weight | 50g |

## Operation and Storage Environment

| Item | Specification | Note |
|---|---|---|
| Operating Temperature | 0 °C to 55 °C | 1. Non-condensing. |
| Storage Temperature | -20 °C to 60 °C | 1. Non-condensing. |
| Operating Humidity | 5% to 95% | Non-condensing |
| Storage Humidity | 5% to 95% | Non-condensing |

## FCC Regulatory Compliance: 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 VP4880, VP4880C, or VP4880E not expressly approved by ID TECH could void the user's authority to operate the device.

## Other Agency Approvals and Compliances

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

## For Software Developers: Software Development Support

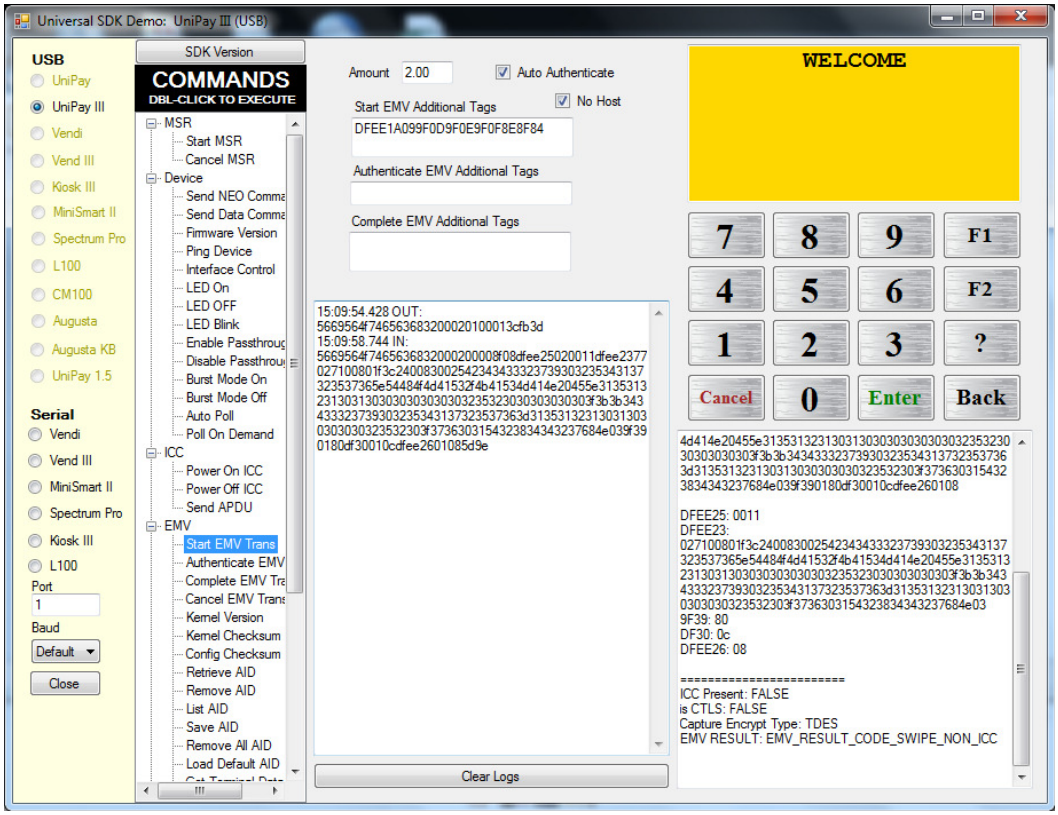
VP4880 devices are designed to be compatible with a wide range of third party payment applications. ID TECH offers a Universal SDK (available for iOS, Android, or Windows) to enable rapid application development with any model of VP4880 as the target device. The languages supported include Objective C (on iOS), Java (on Android), and C# (on Windows). The Universal SDK includes rich, powerful libraries that make communication with VP4880 comparatively easy while greatly facilitating debugging.

Normally, development of applications that take advantage of VP4880 capabilities can be done in a high-level language like Java or C# (using convenience objects and data structures), obviating the need to send hex-code commands directly via USB-HID. Nevertheless, if you need to communicate with the device via audio jack or via USB-HID, it is possible to do so. For a command reference for VP4880-series products, consult the *NEO Interface Developers Guide* (IDG), P/N 80139403-001.

## Demo App

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

To use the demo app: On Windows, plug your VP4880-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 above. Single-click on a command to populate the center panel of the window with optional settings relevant to the command (e.g., "Amount" and "Start EMV Additional Tags" above). In some cases, text fields will appear, allowing you to enter custom values. When you are ready to execute the command in question, double-click it in the command tree. 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.)

**Revision History**

| Revision | Date | Description of Changes | By |
|---|---|---|---|
| A | 9/15/2016 | Initial release | KT |
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