

VTAP100 mobile wallet NFC reader - USB



The VTAP100 reader from Dot Origin can selectively read and decrypt NFC cards from iPhone or Android devices, and transfer this data to a connected system. It can also read unique IDs, MIFARE sector and secure encoded data from many RFID and NFC cards and tags, including DESFire, Ultralight AES, NDEF, HCE and MIFARE2Go.

The VTAP100 reader can be used in many environments, including retail loyalty, cashless payment, gym check-in, and sports ticketing, at front desk, self-service and point of sale locations. The VTAP100 remains logically separate from any payment mechanism. This simplifies data and security considerations, and the human interaction. It does not support EMV payments, but can be used for stored value and points redemption applications.

VTAP100 has been designed to support a smooth transition from plastic to mobile NFC cards so, alongside mobile passes, the VTAP100 will also read popular contactless RFID or NFC smartcards and tags, to support mixed-use applications. It is fully certified by both Apple and Google to work with their VAS, Smart Tap and ECP2 access control protocols.

A USB connection from any PC is used to configure the VTAP100, by editing simple text files. There is support for secure on-board decryption of many pass types and storage of ECC and AES keys. These keys can be easily updated but cannot be extracted from the device. The configuration can be locked, so that the device is password protected or read-only in general use.

The VTAP100-USB can output card data over USB in the same way as a mag-stripe, barcode or QR code scanner. This could be a keyboard emulation or over a virtual COM port interface with protocol support including secure OSDP over USB. This makes it possible to add the VTAP100 to existing systems without software changes, to update an established card or ticket experience, to one where passes are wholly electronic.

The VTAP100-USB is supplied in a compact case for desktop, panel or wall-mounting, for indoor use. It comes with a captive USB cable. An RS-232 cable/interface is available as an alternative. We can supply customised front labels for a small additional fee, typically for orders of 100 or more units.

A VTAP100 reader has the facility to configure custom LED and note sequences for operator feedback. It includes additional NFC tag emulation and GymKit handoff modes for more specialist use cases.

This is all you need to get started with mobile NFC pass reading, as it includes access to create demonstration mobile passes, so that you can test your application. For production purposes you will need to use a third-party pass provider, or integrate directly with Apple and Google.

Optional VTAP Agent software can be used for client-side web browser and cloud integration, on any VTAP reader connected to the PC running this free Windows application.

Other versions of VTAP100 are available, for example the VTAP100-PAC-W has a Wiegand interface for access control and turnstiles, and the VTAP100-OEM, a certified reader board for integrators, providing both USB and RS-232 serial connectivity. Please contact us to discuss availability of these options.

Universal NFC reader that supports a wide range of cards, tags and mobile credentials including Apple Wallet, Google Wallet and all MIFARE, DESFire and NFC tag types. Fully certified for VAS, Smart Tap and ECP2. USB keyboard emulation and powerful virtual COM interface. Ergonomic case with multiple mounting options.

To buy, visit:

<https://www.smartcardfocus.com/shop/ilp/id~954/p/index.shtml>

This Product Briefing has been produced by [Dot Origin Ltd](#), the smart card experts behind [SmartcardFocus.com](#). If you have a query email [sales@smartcardfocus.com](mailto:sales@smartcardfocus.com) or call us on +44 (0)1428 685250.

## Technical Specifications

### Physical characteristics

Dimensions: 97mm x 49mm x 40mm (3.8in x 1.9in x 1.6in)

Mounting options: Can be securely counter- or wall-mounted; 2 x mounting holes in base plate

Housing options: Available in grey or black impact and UV-resistant PC-ABS; Rotate base for desktop or wall-mount orientation

Front label: Customisable - 41mm x 57mm (1.61in x 2.24in) - scratch, water and UV resistant

Power supply: 5V DC (typ. 110mA, max 150mA)

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Cable: 1.8m (71in) USB-A captive cable

Weight: 114g (4.0oz) including cable

Operating conditions: -25 to +70°C (-13 to 158°F) ; 0 to 95% RH non-condensing; designed for indoor use

### NFC Interface

Frequency/standards: 13.56MHz, ISO 14443A/B, ISO 15693 and ISO 18092

Antenna(s): Integrated 40mm (1.57in) square antenna

Read range: Typically 50mm (2in) depending on environment and phone/card/tag

#### Mobile wallet compatibility:

- Apple Wallet NFC cards (VAS for loyalty/membership/tickets, ECP2 DESFire for Access/ID)
- Google Wallet NFC cards (Smart Tap, including extensions, MIFARE2Go DESFire)
- Card auto-selection with VAS, ECP2, Smart Tap and DESFire
- Express Mode & CDCVM with ECP2
- Mobile device type detection
- ECC key auto-selection and reporting
- Multiple pass type IDs, Apple enrolment URL and Google STUID capture where supported

#### Card/tag compatibility:

- UID/CSN reading from all supported card/tag types including NFC Type 1 (Topaz), Type 2 (MIFARE Ultralight & NTAG), Type 3 (FeliCa), Type 4 (DESFire, T=CL & HCE), Type 5 (ICODE) & MIFARE Classic;
- NDEF records from NFC Type 2, 3 & 4;
- Block data from MIFARE Classic, Ultralight/NTAG (NFC Type 2) & ICODE (NFC Type 5);
- Secure data reading from MIFARE Classic, MIFARE DESFire, MIFARE Ultralight AES.

Other NFC modes: Dynamic NFC format NDEF tag emulation with smart write-back; GymKit handoff

Pass IDs: 6 x Apple merchant IDs and 6 x Google collector IDs

Encryption key slots: 6 x ECC key slots (for Apple & Google ID keys); 9 x Application key slots (for MIFARE Classic, DESFire, Ultralight AES and/or OSDP secure channel)

Encryption algorithms: NIST P-256 modes ECDH and ECDSA, HMAC SHA-256, AES-128 and AES-256 in CTR, GCM, CMAC and CBC modes, ANSI-X9.63-KDF & HKDF according to RFC5869 using HMAC-SHA256, key derivation following NXP AN 10922

## **USB interface**

USB device types (can enable/disable as required):

- USB Mass storage (for easy configuration, key loading & firmware updates);
- Human Interface Device (standard barcode reader/keyboard emulation);
- USB Virtual COM port (for configuration, file transfer and command interface, including OSDP over USB COM)

Cloud connectivity Optional using VTAP Agent software

## **Network interface**

IP connectivity: Optional via Windows PC using VTAP Agent software

## **Other features**

Operator feedback: Buzzer and LED provide device status and tap transaction feedback from reader and/or connected device/application, with customised colours and buzzer frequency and sequences

Reader management: USB/serial interface using configuration text files that can be locked and encrypted firmware file for field upgrades

Input/Output options: Built in serial RS-232 interface, supporting external barcode scanner input or alternative serial output/command mode/cable

## **Compliance / Certification**

Apple VAS, Apple ECP2/Access, Google Smart Tap, UKCA, CE, FCC, ISED, RoHS  
24-month limited hardware warranty

**Manufacturer's part number:** VTAP100-USB-CC

**Country of origin:** UK

**HSF code:** 84719000

**Manufacturer:** Dot Origin