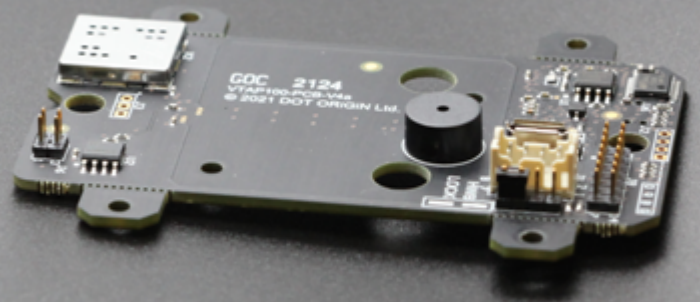


Mobile pass NFC reader module

A contactless reader that interacts with mobile phones as well as popular RFID cards and tags. The VTAP100 from Dot Origin retrieves NFC wallet passes from iPhone and Android devices, using a simple tap, then decrypts and transfers that pass data to other systems.

Pass users only need the Apple or Google Wallet app. The VTAP100 is fully certified by both Apple and Google for VAS and Smart Tap protocols.



Quick deployment

The VTAP100 has been designed specifically for mobile pass applications. It includes features such as automatic pass selection, even when the screen is off (on iOS). It can also read popular contactless NFC and RFID cards and tags, to support mixed use applications and easy migration away from plastic. It can emulate a barcode/QR code scanner and can be configured to selectively extract and send on pass data in formats already in use. The VTAP100 can be easily retrofitted to existing systems, or quickly integrated into new platforms, for a smooth transition to an Apple and Google digital wallet card experience.

Easy management

Configuration of VTAP100 operating parameters is done over any host interface, USB or serial. The file-based approach is platform independent and requires no drivers or dedicated software. For serial file transfers, the ZModem protocol is used with active (send on tap) and passive (command/response) interface options. Flexible and intuitive settings can be edited manually or by software, and real-time commands can be sent. They include support for multiple pass profiles and private keys plus tailored user feedback over RGB LEDs and a buzzer.

Strong security

The VTAP100 has been designed with security in mind, to protect the merchant private keys needed to decrypt pass data. So it is not possible to extract the keys once loaded, although they can be updated easily, in standard file formats. The device firmware can also be updated as an encrypted file.

Password protection of all configuration data is available, with reset to factory defaults if needed, clearing all sensitive data. MIFARE secure sector reading is also implemented to support migration from legacy systems.

Flexible form factor

The VTAP100 OEM pre-certified reader board is ready for you to integrate into your own housing and system. Mount it using holes on the snap-off tabs or remove those tabs and use holes on the body of the board for a compact fit. The board comes fully certified for UKCA, CE, FCC and ISCED.

Other models available, with neat cases for desktop, wall or door frame mounting, and additional electronic output interfaces including Wiegand and RS-485.

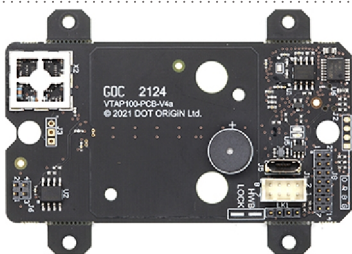
Learn more on the VTAP website at <https://vtapnfc.com>.

VTAPI00-OEM SPECIFICATION

For information on pricing and availability email vtap-sales@dotorigin.com

Physical characteristics	
Dimensions	41mm x 79mm (1.61in x 3.11in), with integrated 40mm (1.57in) square antenna
Power supply	5V DC (typ. 110mA, max 150mA)
Mounting options	4 x integrated mounting holes and 4 x removable mounting holes/lugs
Weight	6g (0.21oz)
Operating Temperature	-25 to +70°C (-13 to 158°F)
Operating Humidity	0 to 95% RH non-condensing
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 25mm (1in) depending on environment and phone/card/tag antenna
Mobile wallet compatibility	Apple Wallet NFC pass (VAS for loyalty/membership/ticketing plus ECP2.0 for Apple Access) Google Wallet NFC pass (Smart Tap, extensible, including generic private passes) Pass auto-selection, including Apple ECP1, ECP2 and Express Mode compliance; Mobile device type detection and inclusion; Multiple simultaneous pass IDs; ECC key auto-select; Apple enrolment URL and Google STUID capture, where supported.
Card/tag compatibility	MIFARE Ultralight, MIFARE Classic, MIFARE DESFire,ICODE, NFC Forum Types 2,4,5; UID/CSN reading as standard on all card types; Secure data reading on MIFARE Classic and MIFARE DESFire; NDEF record reading on Type 2 & 4 (Ultralight/NTAG and DESFire/HCE)
Other NFC modes	Dynamic tag emulation (text, URI, raw data) with smart write-back
Pass IDs	6 x Apple merchant IDs and 6 x Google collector IDs, if supported
Encryption key slots	6 x ECC key slots (for Apple & Google merchant IDs); 6 x Application key slots (DES or AES)
USB/Serial interfaces	
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 (includes active, passive and file transfer modes)
Serial interface	Physical RS-232 serial port (includes active, passive and file transfer modes)
Connectors	Micro USB socket and 8-pin captive cable connector for USB and RS-232 (2mm pitch)
Operating system support	Full support on Windows, Linux, OSX; support for keyboard emulation and virtual COM device types on Android; most embedded and other operating systems support keyboard emulation as a minimum
Other features	
Operator feedback	Buzzer and RGB LEDs (configurable default colour + automatic card/pass read beep/flash)
Field configurable	Yes, using configuration files, and with password and hardware-based lock
Field upgradeable	Yes, using encrypted firmware file and secure bootloader, and factory reset feature
External antenna	Optional via 3-pin external antenna connector
Hardware security	Optional cryptographic co-processor with secure hardware-based key storage
Encryption algorithms	ECDH, NIST P-256, ECDSA, HMAC SHA-256, AES-128 CTR, AES-256 GCM ANSI-X9.63-KDF & HKDF according to RFC5869 using HMAC-SHA256
Compliance/Certification	
Apple VAS, Google Smart Tap, UKCA, CE, FCC, ISED, NCC, RoHS	
24-month limited hardware warranty	

JANUARY 2024
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2D and 3D drawings on request

DOT ORIGIN