VTAP

DATASHEET

VTAP100-PRO-POE
VTAP100-PRO-POEU

VTAP100 PRO NFC reader - PoE

IP-connected reader with Ethernet & optional USB

Universal contactless NFC reader designed for advanced IP-connected mobile wallet loyalty, membership, ticketing, identity and access control applications.

Powerful Ethernet connectivity plus USB and I/O expansion options.

Supports a wide range of cards, tags and secure NFC credentials, including Apple Wallet, Google Wallet, MIFARE® and NFC tags.

Key features and benefits

- Fully certified by Apple and Google for VAS, Smart Tap and ECP2 access control protocols
- PoE-powered and connected reader with optional USB interface
- MIFARE & NFC tag support including UID, MIFARE sector, secure DESFire, Ultralight AES, NDEF, HCE and MIFARE2Go
- Secure on-board decryption of many pass types and storage of multiple ECC and AES keys
- Configuration, keys and firmware updates either managed locally over USB, or by VTAP Cloud
- Ethernet interface allows taps to be sent to a local or remote network address, or via VTAP Cloud
- Can be desktop, panel or wall mounted for indoor use
- Optional I/O expansion provides relays, serial LED and other interfaces

Why choose VTAP technology?

VTAP technology is available with a wide range of form-factors and interfaces, offering unrivalled capabilities and features.

VTAP readers support all types of NFC mobile wallet passes and credentials, with extended support for many common RFID/NFC cards and tags.

It is easy to integrate a VTAP reader into any system — platform independent, with no SDK required. And it is simple to configure, deploy, use and update any VTAP reader in the field. Connectivity options include a wide range of host interfaces and protocols.

The VTAP Cloud option adds remote configuration and a unique 'taps to apps' gateway on selected models.

All models are certified for Apple VAS, Google Smart Tap and Apple ECP2/Access Control/Transit.

Why choose Dot Origin?

Dot Origin is a trusted partner of Apple and Google, licensed and certified to deliver NFC reader hardware that supports their Wallet programs

We are also long-established partners of NXP, which enables us to support many RFID and NFC technologies such as MIFARE DESFire, NTAG and MIFARE2Go.

We have an extensive partner ecosystem of NFC Wallet card and pass providers, cloud application providers, resellers, installers and distributors.

We offer comprehensive service and support including dedicated consulting and engineering services.

Our VTAP products are engineered in the UK and available in many form-factors as finished products or embedded modules.

Learn more about the VTAP advantage and VTAP readers at **https://vtapnfc.com**.

https://vtapnfc.com
North America +1 (562) 262-9642
Rest of the world +44 (0) 1428 685861
vtap-sales@dotorigin.com

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VTAP100 PRO PoE NFC reader specification

Physical characteristics	VTAP100-PRO-POE-CC or VTAP100-PRO-POEU-CC: IP-connected reader with Ethernet and optional USB
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	Rotate base for desktop orientation or wall-mount orientation Available in grey or black impact and UV-resistant PC-ABS
Front label	Customisable - 41mm x 57mm (1.61in x 2.24in) - scratch, water and UV resistant
Power supply	3W Power over Ethernet according to IEEE 802.3af or 802.3at (or standard 5V USB - POEU model only)
Cable	0.25m (9.8in) Ethernet cable with overmoulded RJ45 socket; Optional 1.8m (71in) USB-A captive cable , included with POEU model
Weight	POE: 104g (3.7oz) including Ethernet cable; POEU: 152g (5.4oz) including both Ethernet and USB cables
Operating conditions	-25 to +70°C (-13 to 158°F); 0 to 95% RH non-condensing; designed for indoor use (with outdoor option - POE model only)
NFC interface	
Frequency/standards	13.56MHz, ISO 14443A/B, ISO 15693 and ISO 18092
Antenna	Integrated 40mm (1.57in) square antenna
Read range	Typically 50mm (2in) depending on environment and phone/card/tag
Mobile wallet compatibility & features	Apple Wallet NFC cards (Apple VAS for loyalty/membership/tickets, ECP2/DESFire for Access/ID/Transit); Google Wallet NFC cards (Smart Tap, including extensions, MIFARE2Go DESFire); Samsung Wallet NFC cards (Samsung VAS*, MIFARE2Go DESFire); Card auto-selection with Apple VAS, ECP2, Smart Tap and DESFire; Express Mode & CDCVM with ECP2; Mobile device type detection and reporting; ECC key auto-selection and reporting; Multiple pass type IDs, Apple enrolment URL and Google STUID capture where supported. *=Feature license required
Card/tag compatibility & data reading capability	*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 card/tag emulation with smart write-back; GymKit handoff; NFC Forum connection handover (CH/TNEP)
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)
Network interface	
IP connectivity	Ethernet - 10BASE-T/100BASE-TX connection (IEEE 802.3 compliant) to internet, DHCP and fixed IP
Tap processing	VTAP Cloud can route tap data & reader ID to any web app or API endpoint, with standard/custom integrations & authentication. Response/decision can drive LEDs, buzzer, USB output or relays (with VTAP100-PRO-EXP1). Local tap processing can include offline database lookup and some direct IP connectivity (feature license required).
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	Locally, via USB interface, using config file, key and encrypted firmware files, with optional password lock. (USB available on POEU model only.) Remotely, via IP, using VTAP Cloud, individually or by fleet, including automatic firmware updates.
Input/Output options	Built in serial RS-232 interface provides external barcode scanner input if required; Optional VTAP100 PRO I/O expansion box provides 2 relays, 1 input and can drive up to 255 serial RGB LEDs from reader and/or target tap application (see separate VTAP100-PRO-EXP1 datasheet)
Compliance/Certification	
Apple VAS, Apple ECP2, Google Smart Tap, UKCA, CE, FCC, ISED, RoHS; 24-month limited hardware warranty	

AUGUST 2026
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