VTAP

DATASHEET
VTAP100-PAC-W-SQ

VTAP100 NFC reader - Wiegand

Access control reader with Wiegand interface

Universal contactless NFC reader designed for mobile wallet membership, ticketing and access control applications at doors and turnstiles.

Wiegand interface for connection to any legacy door controller.

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
- Wiegand interface for connection to any legacy door controller
- Flexible Wiegand format support includes all common industry bit lengths and decoding methods
- 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
- Support for external serial barcode scanner input
- Configuration, keys and firmware updates managed locally over USB
- Convenient flat two-part case for horizontal or vertical mounting, compatible with electrical back boxes, indoor use only.

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**.

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VTAP100 Access control Wiegand reader specification - square case

Physical characteristics	VTAP100-PAC-W-SQ: Access control reader with Wiegand interface
Dimensions	86mm x 86mm x 25.5mm (3.39in x 3.39in x 1.00in)
Mounting options	Multiple mounting holes in base plate for compatibility with standard electrical back boxes
Housing options	Convenient flat two-part case for horizontal or vertical mounting, indoor use only.
Front label	Customisable - 72mm x 72mm (2.85in x 2.85in) - scratch, water and UV resistant
Power supply	USB 5V DC (typ. 110mA, max 150mA) Wiegand 8V-16V DC @ 30 to 100mA
Weight	98g (3.5oz), no cables
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	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)
USB connectors	Micro USB socket or 8-pin captive cable connector for USB (2mm pitch)
Operating system support	Windows, Linux, MacOS full support for keyboard emulation, virtual COM device and mass storage; Android support for keyboard emulation, virtual COM device; iPhone and iPad support
Access control interface	
Interface type	Wiegand - D0/D1 outputs, Buzzer/Red/Green inputs plus nominal 12V power input
Protocols	Wiegand protocol including standard and custom bit lengths and multiple data manipulation options
Connectors	7-pin 3.5mm removable screw terminal block
Cabling	24-26 AWG multicore shielded cable
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.
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, Google Smart Tap, UKCA, CE, FCC, ISED, RoHS; 24-month limited hardware warranty	

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