

Contactless Reader for Transit



SecureTap
CONTACTLESS READER



optional external antenna

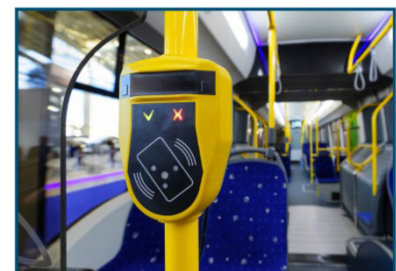
The SecureTap® Contactless Reader Module brings contactless reading, processing and secure communications technologies together in a single, flexible product platform for public transportation closed-loop applications.

The Brush SecureTap® reader module is designed for integration into fare boxes, validators and transit gates. Its robust construction is suitable for high traffic applications in public areas and the intuitive design simplifies installation and retrofitting applications.

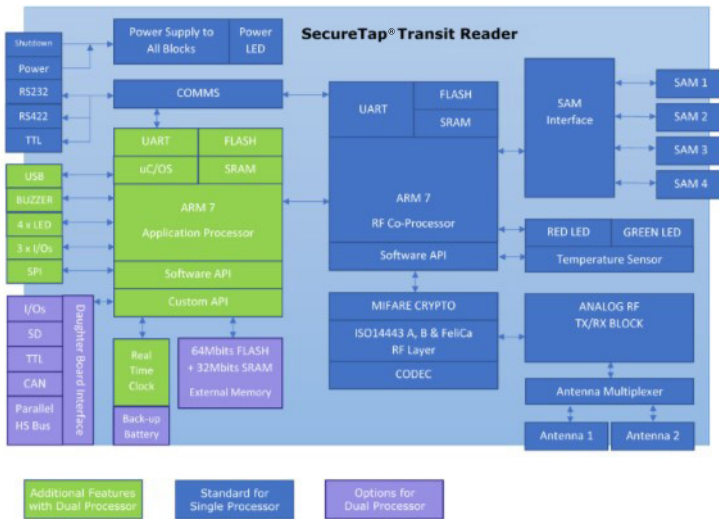
If your application includes multiple technologies for fare gate, fare box or fare validation, Brush can customize the SecureTap® reader to include media such as magnetic stripe, QR and barcodes, and even Bluetooth Low Energy for future applications.

Reader Features and Benefits

- Off-the-shelf, nonproprietary CIPURSE, ISO/IEC 14443:2016 compliant contactless reader
- Designed for contactless closed loop public transit cards, tickets and NFC for Mobile
- 4 high-speed SAM sockets (ID000 Format)
- High density of integration / compact design
- ISO 14443-A/B, ISO 15693, ISO 18092
- Supports NFC and Felica RF protocols
- ESD protected RS232 serial interface, RS422/TTL
- Integrated High level support for Mifare Classic, Classic EV1, Desfire EV1/EV2, Ultralight C, Ultralight EV1, Plus and Plus SE
- Fully customizable firmware and large flash memory space
- Supports remote firmware upgrades
- Integrated antenna multiplexer
- Available in two standard versions: with or without an application processor



Engineering Block Diagram



The SecureTap® closed-loop contactless reader module supports transponders according to ISO/IEC 14443 Type A and Type B, ISO/IEC 15693, as well as NFC and Felica devices according to ISO/IEC 18092.

The compact design with available interfaces (RS232 or USB) enable an easy integration in terminals, housings and other devices.

Read range: memory cards up to 10.0 cm and CPU cards up to 8.5 cm.

The optional, small footprint external antenna enables optimal placement for ideal read zone.

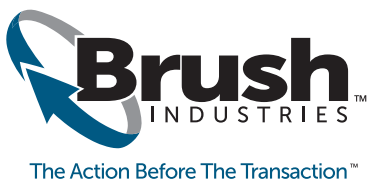
The SoftCrypto and SAMCrypto High-Level-Functions offer a comfortable and fast interface for access to encrypted data of Mifare and CIPURSE applications.

Available in two standard versions: with or without an application processor. Can be customized to include optional features.

SecureTap® Reader is ISO/IEC 14443:2016 compliant per ISO/IEC 10373-6:2016 test method.

Technical Data

Material	FR4 PCBA
Dimensions	Control Board: 104 W x 67 L x 10 H mm Antenna Board: 104 W x 67 L x 1.6 H mm Antenna Cable: 120 mm
Weight	200 g +/- 20 g (overall)
CPU Types	Dual CPU Architecture - 1 RF CPU and 1 Application CPU: <ul style="list-style-type: none"> 1 ARM 7 48 MHz RF CPU 256 K Flash, 64 KB SRAM 1 ARM 7 72 MHz APP CPU, 512 K Flash, 98 KB SRAM
External Memory (optional Dual CPU)	8 MB Flash / 4 MB SRAM
SAM Sockets	4 x Sam Slots. ISO/IEC 7816 A, B, C compatible
Operating Temperature	- 10° C to + 70° C (0% - 95% RH, non-condensing)
Storage Temperature	- 20° C to + 85° C (0% - 95% RH, non-condensing)
Supply Power	12 V DC +/- 10% regulated (normal mode) 5 V DC 1.8 Watt Typical (USB powered mode)
Host Interfaces	ESD protected RS232, RS422, TTL and USB
Peripherals On Board (dual CPU)	1x Real Time Clock, 4 x LEDs, 1 x Buzzer, 3 x I/O, 1 x SPI—Optional Daughter Board Interface
RF Protocols Supported	ISO 14443-A/-B, ISO 18092 (Felica Protocol and NFC), ISO 15693
RF Operating Distance and Output Ratings	13.56 MHz (+/- .50 ppm), Memory Cards up to 10.0 cm and CPU Cards up to 8.5 cm. RF Output power 0.7 Watt Maximum, Bit Rate up to 424 Kbps
Other Features (Dual CPU)	Optional Back up Battery CR1225, Daughter Board Interface, 13 x I/O's, 1 x Secure Digital (SD) Interface, 1 x High Speed bus, 1 x CAN Interface, 1 x TTL (3.3 V UART)
Supported Transponders	CIPURSE profiles - L, T and S type 4 tag; ISO/IEC 14443 A/B; Mifare Classic, Classic EV1, Desfire EV1/EV2, Ultralight C, Ultralight EV1, Plus and Plus SE; HID Type B; Sony Felica.
Antenna Ports	2 x U.FL RF Ports, Multiplexed and Alternating
Upgradeable Configuration	LCD Interface and high speed bus; Extended Memory: 64 Mbits Flash, 32 Mbits SRAM; Expansion Memory for data via external SD memory card interface; SAM Slots (x2 or x4); Antenna Multiplexer to support fast switching between two antennas
Compliance Statement	
Certifications	CE and FCC
Vibration	IEC-68 Part 2 DIN EN60721-3-5 Class 5M2
Safety	IEC 60950-1:2001 EN 60950-1:2001 + A11: 2004
Test for Radiated Emissions, Electrostatic Discharge Immunity, and RF Radiated Immunity	EN61000-6-4: Part 6-4 EN61000-6-2: Part 6-2 ETSI EN 301 489-1 ETSI EN 301 489-3
Transmitter Output Test	ETSI EN 302 291-1 ETSI EN 302 291-2
Radiated Emission and Frequency stability	FCC Part 15
Maximum Permissible Exposure	EN50364



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