



Contactless Transit Reader Unit (CTRU Reader)

The Contactless Transit Reader Unit (CTRU, pronounced as 'C TRUE' Reader) is CLEARLY and TRULY an innovative and customisable next generation reader that is built for e-payment solution.

Industrial built to cater for all adverse conditions in transit, on-board buses and retails.

Field proven solution used in Singapore's transit environment spanning over 25,000 devices.

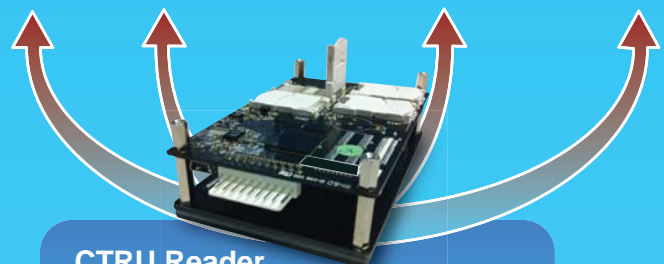
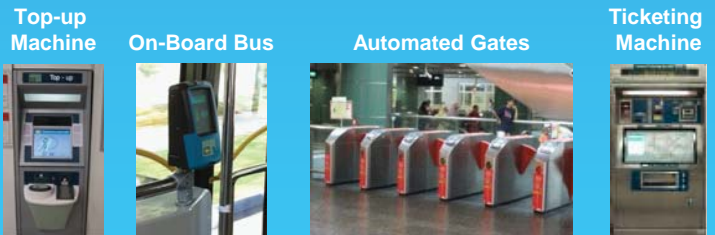
Dedicated Application and RF processor with unmatched performance, reliability, security and seamless transaction for an unrivalled customer experience.

Remote firmware upgradeable on both processors to allow for future enhancement or revision of international standards and business requirements.

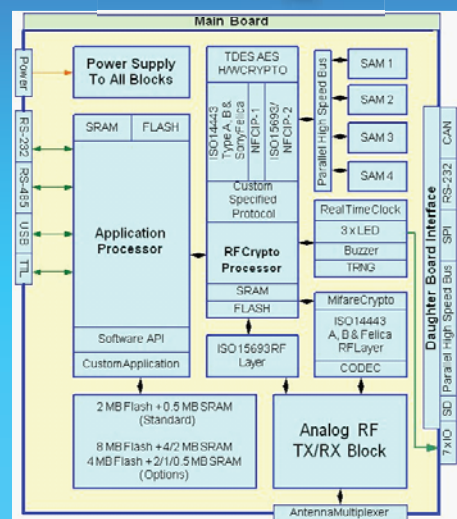
Flexible by design for add-on support for various system reader replacement and new businesses.

Features Rich:-

- Supports ISO 14443 A, B, B' MiFare® products, FeliCa™ products, ISO 18092, ISO 15693 and NFC Tags
- Operating range up to 10cm
- RF bit rates up to 424 kbps
- Expandable on-board memory up to 8MB
- Supports up to 2 antennas and 4 ISO 7816 Compliant On-Board SAMs slot
- Flexible connection: RS232, RS422, RS485, TTL and USB
- Flexible operating power: 12V and USB powered
- On-Board GPIO, SD and LCD pinout
- Expandable to support Ethernet and other peripherals via SPI/CAN
- NFC capability ready
- Support remote firmware upgrade
- SDK available for development



CTRU Reader



Embedded Processors / Memory

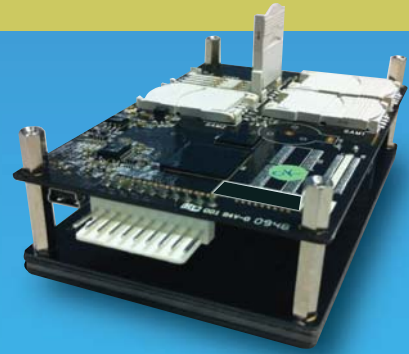
CPU Types	Dual CPU Architecture, 1 RF CPU & 1 Application CPU
On-Board SRAM	512KB SRAM upgradeable to higher memory
On-Board FLASH	2MB upgradeable to higher memory

Secure Application Module (SAM)

Number of SAMs	4 x SAM Slots, ISO 7816 Class A, B & C compatible
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RF Specifications

RF Operating Frequency	13.56MHz (+/- 50 ppm)
Maximum Bit Rate	Up to 424 kbps
Protocols Supported	ISO 14443 A, B, B' MiFare® products FeliCa™ products ISO 18092 ISO 15693 NFC
Reading Range	For ISO 7816 Credit Card Sized Cards: Memory Cards: up to 10cm CPU Cards: up to 8.5cm
Antenna Ports	2 x U.FL RF Ports, Multiplexed and Alternating
Antenna	1 x Shielded with Ferrite / Spacer Backed, Stackable



Peripherals

On-Board	1 x Real Time Clock 4 x LEDs 1 x Buzzer 4 x I/O SPI LCD Interface
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On-Board Ports

10 Pin, 2.54mm Pitch	Power in 12VDC/USB powered, RS232, 4-wire RS485/RS422/TTL
Mini-USB	USB Device
Via Daughter Board Interface	7 x Inputs/Outputs (Inclusive of the 3 On-Board LEDs) 1 x Secure Digital (SD card) Interface 1 x Serial Peripheral Interface (SPI) 1 x High Speed Bus 1 x Controller Area Network (CAN) Interface 1 x TTL (3.3V UART)

Physical Specifications

Operating Temperature	-10°C to +70°C (0% - 95% RH, non-condensing)
Storage Temperature	-20°C to +85°C (0% - 95% RH, non-condensing)

MSI Global is committed to provide quality support with edge-cutting technology.

For more information on our services, please email to Mr. Kwang Sai Weng
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ISO 9000 Certified