

**Automotive MCU**

**SDV HSM**



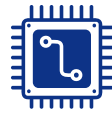
## V2X Superfast Security SoC

RANIX' High performance  
Automotive security SoC, RS2522



### Ultra High performances

ECDSA  
International Cryptos : RSA, ECDSA  
China Cryptos : SM2 DS, SM3, SM4



### Specs for Automotive

AEC-Q100 Grade 2 (-40°C~105 °C)  
EVITA Full HSM  
CC & OSCCA Certificates for China



### Independent R&D for future V2X Security

Fully compliant to high concurrency and low latency requirements of automotive external NIC(networks interface card) specifications and internal security implementations. Specially designed to meet all automotive standards regarding various application requirements.  
Specially designed to meet all automotive standards despite of varying application requirements.



### Rich I/F and flexible application

Multichannel QSPI / SPI /I2C/UART  
API for V2X security standards of C-V2X  
and WAVE

## HSM for MCU - IP for Automotive Security

### Secure CPU

- ARM® SecureCore® SC300™ 32-Bit RISC Core@200MHz
- Memory Protection Unit (MPU)

### Secure Memory

- 256KB Internal SRAM
- 256KB Internal eFlash
- 20KB Flash-Cache
- 32KB Mask ROM

### Peripheral

- 64x16 Secure Counter
- 32x4 Secure Timer
- Secure Watchdog Timer
- Secure RTC
- Secure JTAG
- Secure Interrupter Ctrl
- Secure DMA
- Secure PMU
- Secure TRNG

### Interface

- 64x16 Secure Counter
- 2x SPI slave (quad 60 Mbps)
- 1x I2C master
- 2x UART (8 Mbps)

### Security Attack Countermeasure

- Active Shield
- EMI Attack Shield
- Voltage/Temperature/ Laser Sensor
- Glitch/ Frequency Sensor
- IP Access control, Mem Access control
- FA detect, FA recovery design
- Security Policy Controller
- Secure Self-test IP

### Packet Stream Engine

- Transport Level CRC & Encryption
- Packet Stream Protocol
- Async Crypto Operation
- HSM Mail BOX I/F
- AES128/SM4/AES/DES/TDES/GHASH: (max 1 Gbps)
- SHA256/SM3/Whirlpool: (max 1 Gbps)
- ECB/CBC/CFB/OFB/CTR/CMAC/GMAC/HMAC
- CCM/GCM/C-DRBG/H-DRBG/KDF
- ECDSA/ECIES/ECDH

### V2X Security

- IEEE 1609.2
- ETSI TS 103 097
- YD/T 3594
- Implicit certificates
- Pseudonym certificates
- Butterfly key Expansion
- Linkage Value

### Certifications

- OSCCA\*
- CC EAL 4+\*
- EVITA-full\*
- ASIL-C\*
- AEC-Q100 grade-2\*

### Physical Specifications

- 3.3V and 1.8V, 1.2V Power Supply
- Operating Temperature: -40°C - 105°C
- ESD : 2kV
- Package: QFN-64, QFN-88

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