PRODUCT BRIEF

SECORA™ Connect E

Embedded Secure Element providing turnkey EMVCo payments for IoT devices

Several payment transactions are processed by various IoT based devices like laptop, tablet, AR/VR, gaming devices etc., daily. eCommerce payments are getting convenient and faster. More than half of the world's transactions are eCommerce based (Source: ECA 2025). These transactions are now secured by cloud tokens and end to end encryption of payment card details provided by the user. Most of the EMV payment cards have converged to EMVCo certified chips as the prefered option. eCommerce payments also began a trend of adopting payment token stored in EMVCo certified Secure Element.



SECORA™ Connect E is a Secure Element (SLS21EMK SG-XFWLB-16-1) part of the SECORA™ Connect solution family, addressing payment use cases for connected devices. It comes in an ultra-small (2.9 mm²) packaging. As the smallest EMVCo certified chip for consumer devices on the market, SECORA™ Connect E fits into any IoT (USB dongles, tiny gaming joysticks, TV remote) or wearable (ex: AR/VR) design regardless of size, shape or material, while JavaCard and Global Platform foundation provides seamless integration through comprehensive development tools. It also supports PQC-protected in field OS updates and additional java applet functionality apart from pre-certified payment use cases.

Key applications

- e-Wallet in app (web) remote ecommerce (non-NFC) payment
- Flexible Java Card platform for custom applets
- Embedded Secure Element for notebook, tablet, AR/VR, smart speaker, smart TV, gaming, IoT hub/devices, etc.

Secure Element and system-on-chip features

- Java Card 3.2, GlobalPlatform 2.4 Amend A, C, F
- MCmicro, DSRP, CDCVM
- Supports Decentralized Secure Element Management (DSEM)
- PQC safe infield updates
- Classic remote provisioning via SEI-TSM: SCP 02, 03, 11a, b, c
- Host communication via I2C and GP T1'
- Infineon own and partner network for enablement services





Key features

- SG-XFWLB-16-1 (CSP) package: 1.6 × 1.8 × 0.4 mm
- 28 nm with RRAM NVM technology
- APDU over I2C according to GP T1'
- Voltage class C+D (1.08 – 1.98 V) 1uA hibernate current
- Small physical footprint (2.9 mm²) allowing highly compact PCB designs
- EMVCo certified embedded Secure Element with MCMicro applet
- MCMicro for in-app (web) pay-ment for notebook, tablets, smart speaker, AR/VR devices, smart TV, and IoT hubs

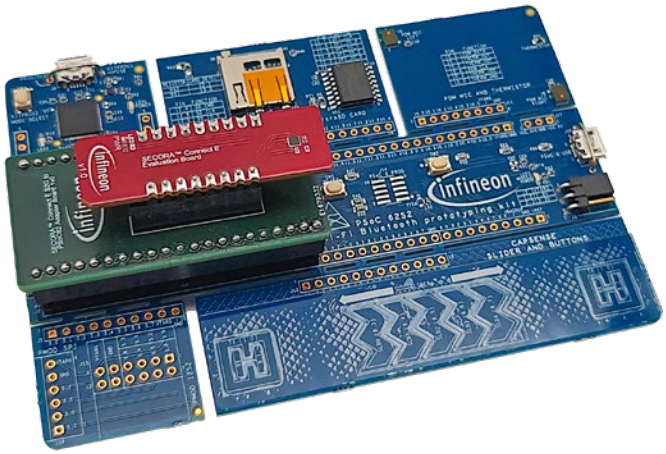
Key features

- Ultra-low standby power consumption: ~1uA
- Less external components: up to 60 % BoM cost reduction compared to NFC controller based Secure Element
- Ultrasmall PCB footprint: less than 2.9 mm²
- Low voltage supply with nominal 1.2 V
- Based on state-of-the-art technology node 28 nm with RRAM NVM (Non-Volatile Memory technology)
- Simplified interface to Host Controller: only I2C implementation required
- Enable eCommerce wallet and payment tokenization with our white label platform offering



Evaluation Board

The SECORA™ Connect evaluation kit builds onto the PSOC™ 6 prototyping kit as host platform. It features the PSOC™ 6 MCU to handle the I2C2USB connection to a notebook. The prototyping kit includes an adapter for the Shield2Go form factor. The kit enables customers to evaluate remote payment and SE management capabilities via the wallet application of the SECORA™ Connect E. Additionally, the eval board features a match on companion device functionality to enable 2nd factor authentication (CDCVM).



Glossary

AR/VR: Augmented Reality/Virtual Reality
GPIO: General-purpose input/output
LMA: Load modulation amplitude
RRAM: Resistive Random-Access Memory
NVM: Non Volatile Memory
RED: Radio Equipment Directive
NFC: Near Field Communication
DSEM: Decentralized Secure Element management
CDCVM: Consumer device customer verification method
BoM: Bill of Material
APDU: Application Protocol Data unit
PQC: Post Quantum Cryptography
DSRP: Digital Secure Remote Payments
SEI-TSM: Security Element Issuer Trusted Service Manager

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