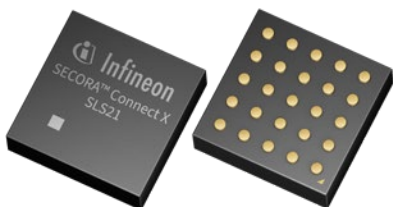


SECORA™ Connect X

Empowering wearables with an active ultra-low power payment card emulation

SECORA™ Connect X (in LGA25 package) for wearables like smart watches, fitness trackers, and smart rings features a Secure Element with active ultra-low-power NFC card emulation (CE) that enables Mastercard®/Visa® contactless payments and many other NFC applications.



SECORA™ Connect X is the smallest active NFC CE payment device on the market. As a subset of the NFC mobile device class, it is optimized for the most common wearable use cases.

The wearable NFC antenna can be matched (form, size, material) specifically to optimize contactless performance and maximize battery life. Compared with standard NFC controllers, SECORA™ Connect X is smaller in size (~6.2 mm²), has a lower standby current (~2 µA), delivers better communication quality (higher load modulation amplitude), and enables better contactless performance (min. field strength). Fewer external electronic components are required for design-in, resulting in a reduced BoM.

SECORA™ Connect X is based on a standard Java Card and GlobalPlatform Secure Element operating system that features state-of-the-art functionality like host card emulation (HCE) pass-through mode, PQC-safe in-field software updates, Decentralized Secure Element management (DSEM), and a full suite of secured channel protocols for Trusted Service Manager (TSM) platforms.

1 MB of free memory for data and custom applets means OEMs can add their own applications by using Infineon Java Card IDE including OS simulator and the open platform framework (Java Card and GlobalPlatform). Transaction events via GPIO/active host notification can be triggered by these applets.

Three modes of operation enable various NFC use cases:

- 1. Card emulation mode:** Standard NFC Secure Element supporting Java Card applets for EMVCo® payment use cases based, for example, Mastercard® and Visa®, second factor authentication based on CDCVM applet, digital car keys based on Car Connectivity Consortium (CCC) standards, transport ticketing and access control using NRG and Calypso®, secured token use cases based on FIDO2.¹ (L2 certified) standards, and brand protection or simple tag use cases using secured NFC Type 4 tags.
- 2. Host card emulation mode:** NFC pass-through functionality (NFC to I²C bridge) compatible with Wear OS supporting use cases like HCE payments, loyalty cards, transport cards, tickets, door/car access, and dynamic NFC Type 4 tags.
- 3. Hybrid mode:** Secured connection handover from NFC to Bluetooth® for use cases like mobile driver licenses (ISO18013-5) and Aliri physical access.

¹ Active: contactless transaction powered by the wearable battery

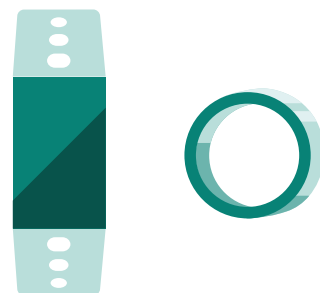
² "RED compliance" primarily refers to meeting the EU's Radio Equipment Directive (RED 2014/53/EU)

Key features

- Turnkey solution for contactless payment and other NFC use cases
- Simplified antenna design-in
- NFC field detection
- Secure Element with pre-loaded applets (payment, digital key, NFC tag, FIDO etc.)
- HCE pass-through mode
- PQC safe in-field software updates
- 1 MB of free memory for data and custom Java Card applets

Key benefits

- Up to 60% reduction in BoM
- Design flexibility with smallest payment chip dimensions (2.5 × 2.5 × 0.6 mm)
- Low standby current (~2 µA)
- Best-in-class NFC performance (LMA, HMin)
- Fast host integration via I²C
- Latest 28 nm Secure Element technology with RRAM
- Enables wearable application to meet all RED requirements²

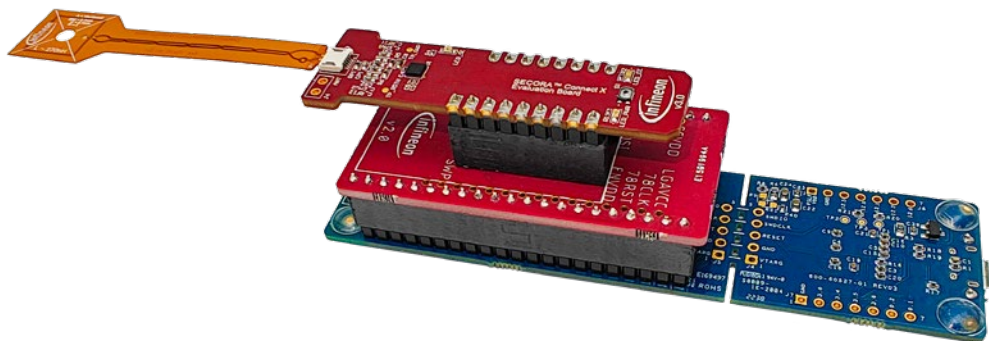


PRODUCT BRIEF

Ease of design with eval kit and application support

The SECORA™ Connect Evaluation Kit builds on the PSoC™ 6 Bluetooth Prototyping Kit as the host platform. This features a PSoC™ 6 MCU to handle the Bluetooth®

connection to a smartphone app and an I²C interface to the SECORA™ Connect shield. The kit comes with a 10 × 10 mm NFC antenna and an additional antenna connector can be used for dedicated customer specific antenna designs.



Further support material to guide customers to reuse the NFC antenna for wireless charging can be provided upon request.

Glossary

GPIO: General-purpose input/output	Hmin: Minimum magnetic field strength
LMA: Load modulation amplitude	LGA: Length grid array
DSEM: Decentralized Secure Element management	HCE: Host card emulation
CDCVM: Consumer device customer verification method	RRAM: Resistive Random-Access Memory
BoM: Bill of Material	RED: Radio Equipment Directive

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