PRODUCT BRIEF

Infineon ID Key S USB

Seamless integration, enhanced performance, and exceptional reliability for secured USB authentication

Infineon ID Key S USB combines the security, performance, and reliability of the SLC38 security cryptocontroller with a universal serial bus (USB) bridge controller in a unique single-package offering.

This system-in-package provides unparalleled flexibility and security, and simplifies even the most complex application deployments, making it an ideal choice for use cases such as USB-based and USB-/NFC-based tokens, dongles, security keys, and other hardware authenticators.

Embedding the Secure Element and the USB serial bridge in one single package, it allows for a small footprint, compact design, and easy integration into any end-user device.

Certified to CC EAL 6+ (high), the SLC38 implements a dedicated security CPU with a 32-bit architecture based on the Arm® SecurCore® SC300, enhanced by Infineon's cache and security technology. It offers a wide range of peripherals as standard: 32-bit timers, a watchdog, a Random Number Generator, a symmetric cryptographic coprocessor for DES and AES calculations, the Crypto2304T engine accelerating long integer-based algorithms, especially RSA and ECCs.

The large amount of RAM (24 kB) makes development easier and increases OS performance. With non-volatile memory sizes up to 800 kB, storing large amounts of data and integrating multiple applications is possible.

Key applications

Infineon ID Key S USB can support all basic USB and USB/NFC token applications such as:

- Authentication
- FIDO security keys for device-bound passkeys
- Digital signatures
- Encryption
- Logical and physical access
- Software protection and management
- Cold wallets / cryptocurrency hardware wallet

Key features

SLC38 security controller

- 40 nm technology
- 32-bit CPU based on Arm® SecureCore® SC300 (100 MHz)
- 800 kB SOLID FLASH™ NVM
- 24 kB RAM
- 3 additional GPIOs

USB serial bridge

- Cortex® M0 (48 MHz)
- 32 kB flash NVM, 4 kB SRAM
- Supports USB 2.0, I^2C, CAPSENSE™, SWD
- 9 GPIOs

Compliance

- CC EAL 6+ (high)
- Prepared for FIPS 140-3 certification
- BSI AIS20/31 RNG (PTG.2, PTG.3, DRG.3, DRG.4)

Communication

- ISO/IEC 14443 type A and/or B
- ISO/IEC 18092 (NFC passive mode)
- ISO/IEC 7816 UART
- I^2C
- USB 2.0

Cryptography

- Crypto processor for symmetric cryptography (3DES, AES)
- Crypto processor (Crypto2304T) for asymmetric cryptography (RSA and ECC)

Packages

- 4x4 mm VQFN28

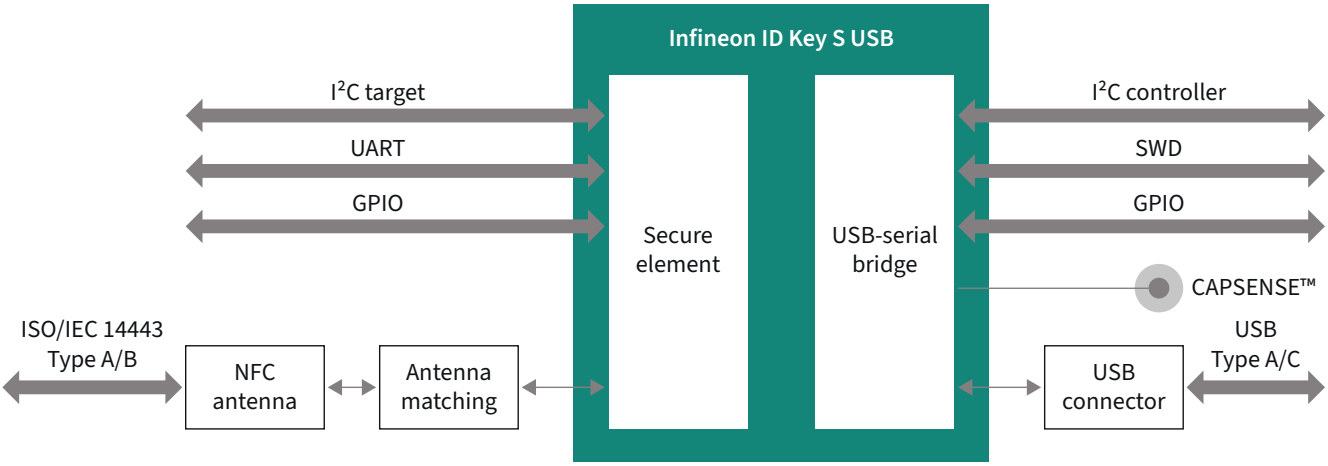
Key benefits

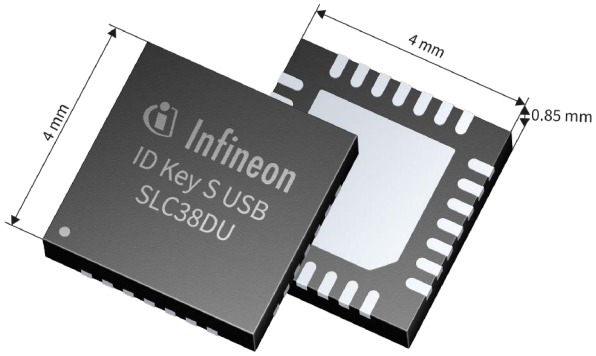
Benefits	Advantages for the customer
Single package offering	SLC38 and USB serial bridge integrated in one single package, allowing for small footprint & easy assembly
Reduced system BOM	Two components in one device reduces the bill of materials and related costs
Large flash memory	Ample storage space and hosting of multiple applications on the platform possible
High-performance CPU	100 MHz clocked SC300 Arm® 32-bit RISC CPU core enabling ultra-fast and secured application execution
USB & NFC capabilities	Ability to address multiple use cases by integrating USB and NFC capabilities in one single device

Available variants

Sales code	Contact	Flash [KB]	RAM [KB]	Input capacity	NRG	Crypto	Temp [°C]
SLC38DUA600UC	CB	600	24	No	No	Symmetric & asymmetric	-25 to 85
SLC38DUA600A8	CL	600	24	27 pF	No	Symmetric & asymmetric	-25 to 85
SLC38DUA800A8	CL	800	24	27 pF	No	Symmetric & asymmetric	-25 to 85
SLC38DUL800A8	CL	800	24	27 pF	Yes	Symmetric & asymmetric	-25 to 85

Hardware blocks and main interfaces of Infineon ID Key S USB system-in-package





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