Next-Level Biometric Brilliance

Giesecke+Devrient's StarSign® Key Fob Leverages Infineon's USB Token Reference Design for Maximum Security in Authentication and Access

Growing need for cybersecurity

In a world where digital threats loom large, the need for robust and foolproof security solutions has never been greater. Users urgently require stronger and more secured authentication and access mechanisms, offering the highest level of protection to overcome a growing wave of cyberattacks. For widespread adoption, these mechanisms must be easy to setup and easy to use. Authentication solutions using biometrics are the key to secured transactions, giving users the most convenient experience possible while reducing the risk of lost or stolen credentials. Giesecke+Devrient's StarSign® Key Fob is a remarkable biometric product designed to provide both unparalleled security and user convenience for strong authentication and secured access.

Giesecke+Devrient (G+D) selected Infineon's FIDO2-certified USB token reference design to serve as the platform for their key fob as it provides unbeatable security advantages and tremendously accelerates the development of USB tokens and FIDO security keys. Based on the SLE 78 security controller, the reference design powers a device-bound passkey for FIDO authentication and stands as a testament to Infineon's commitment to simple and strong authentication.

Harnessing the unparalleled security features of Infineon's reference design, the StarSign® Key Fob represents the next-generation biometric identity platform for physical and logical access, encryption, signing, payment, and other transactions and sets new industry standards in enterprise authentication, secured transactions, and access control. This joint solution is a further milestone in the long-standing collaborative relationship between Infineon and G+D, reflecting their joint commitment to protecting digital frontiers. As G+D and Infineon continue their journey of innovation, one thing is certain: the StarSign® Key Fob powered by the SLE 78 security controller is not just a token; it is a symbol of trust, reliability, and a safer digital future.

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G+D's StarSign® Key Fob

This StarSign® Key Fob is more than just a physical token. It is the first biometric solution combining a FIDO security key (to generate a passkey that is securely linked to the hardware device used for FIDO authentication) with physical access control and payment applications in one single device. The integrated fingerprint sensor provides enhanced security and gives users the convenience of a single touch.

The potential enterprise use cases of this sleek, yet stylish key fob are manifold. It provides authorized physical access to buildings, offices, and restricted company areas. It grants phishing-resistant logical access to company workstations, PCs, laptops, tablets, smartphones, and other IoT devices by authenticating users looking to access servers, drives, company data, and even web and online services.

The key fob seamlessly integrates into existing infrastructures and is supported by a range of communication channels, including NFC, USB, and Bluetooth®

Low Energy (BLE). Offering user-friendly interfaces, it brings the power of authentication and access control to the employee's fingertips. Its versatility makes it an indispensable tool, finally bringing fingerprint biometrics to the enterprise market. With its long-lasting hardware and a tamper-protected Secure Element from Infineon, the key fob promises durability and reliability over time.

Infineon's contribution:
FIDO2 reference design based on the SLE 78 security controller

With all security credentials and applications hosted in the SLE 78 Common Criteria EAL6+ certified security controller from Infineon, the key fob is compliant with stringent security standards, instilling confidence in users and organizations alike. As the reference design is supporting the FIDO open industry standards for two-factor authentication (FIDO U2F) and for strong authentication on the Internet (FIDO2), the StarSign® Key Fob is able to reduce the need for passwords by providing the physical device itself as the first authentication factor, and the built-in biometrics as the second authentication factor.

Featuring the SLE 78, this reference design is the only single-chip solution on the market supporting both a USB and an NFC interface. In addition, the reference design is equipped with a BLE controller for easy upgradability towards triple interface designs. Infineon is the first supplier of a FIDO2 reference
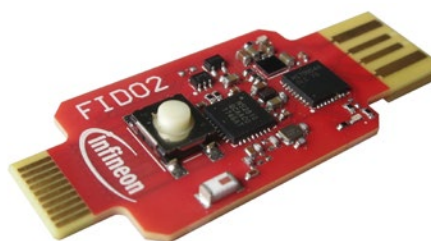
design for FIDO security keys combining enhanced security functionalities with passkey authentication in a cost-effective and compact package.

Equipped with robust hardware security mechanisms, the reference design enables secured storage and processing of cryptographic keys. The design's unparalleled resistance to tampering also secures the integrity of sensitive information, establishing trust among users and organizations. Additionally, it incorporates industry-leading encryption algorithms, guarding the integrity and confidentiality of user data.

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Infineon's reference design accelerates certification process by a factor of 3

"G+D tremendously benefits from the reference design as it enables a rapid and cost-effective design of FIDO2-compliant authenticators and security keys", said Christian Vaas, Head of Product Management at G+D. "With Infineon providing the source codes and all necessary documentation, our developers were fully enabled to implement all functionalities that are essential to be compliant with the FIDO U2F and the FIDO2 authentication standards. We were able to remarkably accelerate the development of our key fob and consequently decreased the time-to-market, which would not have been possible without Infineon's highly sophisticated reference design."

Building on the reference design, G+D has crafted a FIDO-certified product and was able to easily validate the StarSign® Key Fob during FIDO U2F and FIDO2 interoperability testing, obtain the BLE certification, and secure further device approvals. In less than one month, the company secured the FIDO certifications – which is about three times faster than without Infineon's reference design.

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What is FIDO?

FIDO, which stands for Fast Identity Online, is an industry alliance dedicated to revolutionizing online authentication and reducing the reliance on passwords. The FIDO Alliance, a consortium of industry leaders including G+D and Infineon Technologies, has experienced tremendous success in its mission to establish open standards for stronger authentication.

One of its main objectives is to bring faster, easier, and more secured authentication to all industries. It also aims to establish passkeys that are both resistant to phishing and convenient to use as the industry standard for sign-ins to web platforms and applications across multiple user devices.

With widespread adoption across industries, FIDO has become a global benchmark for secured and convenient authentication methods. The alliance's collaborative efforts have reshaped the cybersecurity landscape, driving innovation and empowering users worldwide.

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