

SM-6300 Security Module

RFID, Bluetooth® and Secure Element in one Module



- ✓ Reads all globally relevant RFID standards
- ✓ Compatible with LEGIC neon, advant, prime, NXP MIFARE*, HID iCLASS*, LEGIC MTSC, LEGIC Orbit and LEGIC Connect
- ✓ Fulfills high security requirements based on an integrated secure element



Actual size: 8 x 8 mm

More security for your IoT communication and your reader interactions

Thanks to the embedded certified secure element (SE), the SM-6300 is ideal for applications requiring a high level of security. The security module not only supports all globally relevant smartcard technologies such as LEGIC prime and advant, MIFARE and HID iCLASS®, but also applications implementing LEGIC neon files.

Multi-purpose security module

The SM-6300 supports all relevant smartcard technologies, Bluetooth Low Energy and NFC. With the certified hardware secure element (SE) as security anchor, it fulfills high security requirements.

The SM-6300 is perfect for high-security applications in access control, hospitality, car sharing, public transport, e-payment, smart office and IoT applications.

Secure key store

The tamper-proof hardware SE is ideal for security-critical code and storage of customer-specific application keys. For use with LEGIC Orbit, a secure transport key is pre-programmed. Encrypted end-to-end communication can be established with LEGIC's software service Connect.

System-in-Package

The 8 x 8 mm System-in-Package design integrates a Bluetooth Low Energy and NFC chip, a secure

element and many more components such as capacitors, resistors and crystals.

The LEGIC security platform

The platform includes security modules and smartcard ICs, key and authorization management tools as well as the software service LEGIC Connect consisting of the Trusted Service and Mobile SDK. Thanks to the versatility and seamless interoperability of these components, a wide variety of applications with smartcards and smartphones can be implemented quickly and easily.

Benefits and features

- Supports all globally relevant smartcard technologies such as LEGIC advant and prime, MIFARE[®] and HID iCLASS[®]
- Supports applications with HID iCLASS SE[®] Processor or with NXP MIFARE[®] Secure Access Modules
- Supports Apple licensees implementing ECP 2.0
- Low power consumption during sleep, idle and RF communication, optimal for battery operation
- Bluetooth or NFC-HCE communication to LEGIC Mobile SDK (Android and iOS) to access LEGIC neon files or send messages via LEGIC Connect to customer's management systems
- Parallel Bluetooth and RFID search enables fast interactions
- Bluetooth wake-up
- Supports symmetrical and asymmetrical NFC antennas
- Common Criteria EAL5+ certified secure element
- Supported by LEGIC's Master-Token System-Control (MTSC) and LEGIC's key and authorization management solution LEGIC Orbit
- Storage of customer-specific application keys in SE
- Supports LEGIC Cash
- Compact System-in-Package IC PQFN56, 8 x 8 x 1.1 mm



Evaluation and Design

The EK-6300 Evaluation Kit supports you in the efficient design of Bluetooth Low Energy, contactless smartcard and IoT applications.

- Includes evaluation board EVB-6300 to get familiar with the SM-6300 features
- Development Kit Software DKS-6000 with application examples clarifying the OS50 command set

Technical data

SM-6300 or SM-6300init with firmware OS50			
Variants	<ul style="list-style-type: none"> ▪ SM-6300 with standard functionality ▪ SM-6300init with extended functionality: Creation of MTSC authorization media and initialization of LEGIC advant and prime segments 		
Wired interfaces			
Host interface	<ul style="list-style-type: none"> ▪ UART with 38,400 or 115,200 baud or 1 Mbaud ▪ SPI slave mode 1 or mode 3 ▪ I²C 400 kbit/s or 100 kbit/s 		
8 GPIOs	<ul style="list-style-type: none"> ▪ User-definable for inputs, outputs, I²C and SPI 		
Wireless interfaces			
Bluetooth	<ul style="list-style-type: none"> ▪ V5.0 Bluetooth Low Energy ▪ Bluetooth wake-up ▪ Communication to apps with LEGIC Mobile SDK ▪ Communication to third-party Bluetooth devices: <ul style="list-style-type: none"> • Central or peripheral role • Client or server role • Long Term Key (LTK) • Filter for device selection • Bluetooth beaconing 		
RFID / NFC	<ul style="list-style-type: none"> ▪ ISO 14443 A + B ▪ ISO 15693 ▪ LEGIC RF standard ▪ Inside Secure * ▪ Sony Felica ** ▪ ST SR series ▪ Supports Apple licensees implementing ECP 2.0 for reading NFC credentials in Apple Wallet 		
Security features			
Host interface	<ul style="list-style-type: none"> ▪ Authentication and encryption (optional) 		
Secure element	<ul style="list-style-type: none"> ▪ Common Criteria EAL5+ certified ▪ Secure transport key for LEGIC Orbit 		
RFID	<ul style="list-style-type: none"> ▪ Master-Token System-Control ▪ Mutual authentication ▪ NXP key diversification ▪ AES-128/256 Bit, 3DES 		
Mobile credentialing	<ul style="list-style-type: none"> ▪ Mutual authentication ▪ Key diversification ▪ Data encryption with end-to-end security from LEGIC Connect to SM-6300 ▪ Application-specific AES-128 Bit keys 		
Messaging to customer's management system	<ul style="list-style-type: none"> ▪ Data encryption ▪ Project-specific AES-256 Bit key 		
Operating conditions			
Operating voltage (single / double supply)	Min	Typ	Max
RF part	2.4 V	3.3 / 5.0 V	3.6 / 5.5 V
Digital part	1.8 V	3.3 V	3.6 V
Sleep mode current consumption depending on wake-up function ***	<ul style="list-style-type: none"> ▪ 15.6 µA by Bluetooth using 1 s advertizing interval ▪ 21.0 µA by inductive sensing (OIF), e.g. RFID card ▪ 18.0 µA by inductive and capacitive sensing ▪ 4.5 µA by capacitive sensing ▪ 3.7 µA by internal timer ▪ 0.8 µA by input change on GPIO 		
Operating temperature	-40°C to +85°C		

* Read / write access to smartcards based on NXP MIFARE[®] and cyphered Inside Secure technology such as HID iCLASS[®], HID iClass[®] and NXP MIFARE[®] are products and trademarks by a third party and not owned, manufactured or sold by LEGIC IdentSystems AG.

** Encoding is not integrated

*** Typical current consumption in "single supply" configuration.