AES-TAG

Small and Secure Transponder for Vehicle Keys

The AES-TAG is a cryptographic Read/Write Transponder containing the NIST proven public encryption algorithm AES (Advanced Encryption Standard).

It has been specially developed to fulfill the most extreme requirements in security. The performance optimized implementation is based on 128 bit secret key with multiple authentication methods and security levels. Due to the protocol concept extremely short timings are selectable in all authentication modes single, mutual and mutual ISO. Random number generation is supported via an embedded TRNG.

By providing an exceptional EEPROM memory size each kind of application can be served. About 1 Kbyte of non-volatile memory is reserved for storing any kind of user information and application data. The transponder also contains a 32 bit identification number as well as multiple configuration and lock-mechanisms.

Various protections mechanisms for the user-memory can be configured on customer's choice and preference. A special increment-counter in ring-buffer-architecture completes the outstanding feature list of this product.

The AES-TAG transponder works at a 125kHz resonant frequency and is available in a miniature, durable glass rod for easy moulding into vehicle key heads.

This product offers the same high security algorithm as all AES-Family products so that it is usable across common vehicle platforms and electronics, e.g.   AES-TAG could be used in the valet key without incurring the additional cost of the remote key electronics based on TagMicroTx-family.

Overview

Size / Package
Glass 3,15 × 13,3 mm

Type
Encrypted Read / Write

Encryption Algorithm
AES single authentication
AES mutual authentication
AES mutual ISO authentication

Password - Yes

Transponder Frequency
125 kHz ± 3 kHz

Total Memory
10240 bit

Transponder baud rate
4 kBd @ 125 kHz

Transponder Coding type
Manchester

Operating Temperature
-40°C to +85°C

Applications

▸ Automotive

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Dimensions	Frequency	Material	Type	Total Memory
3.15 × 13.3 mm	125 kHz ± 3 kHz	Glass	Encrypted Read/Write	10240 bit

IC Total Memory Overview:

10240 bit

▶ ~1 Kbyte of free user memory
▶ 512 bit for 32 bit increment counter
▶ 32 bit identifier number
▶ 128 bit secret keys (3×)
▶ 32 bit customer key
▶ 6 lock bits
▶ 32 bit password

Contact: Automotive

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