SECURE-iC
THE SECURITY SCIENCE COMPANY

PRODUCT SHEET

Securyzr™ > Securyzr™ Secure HW Solutions > Securyzr™ Security IP > Tunable Crypto > Memory Protection > SCZ_IP_MP_IdeAut_S7

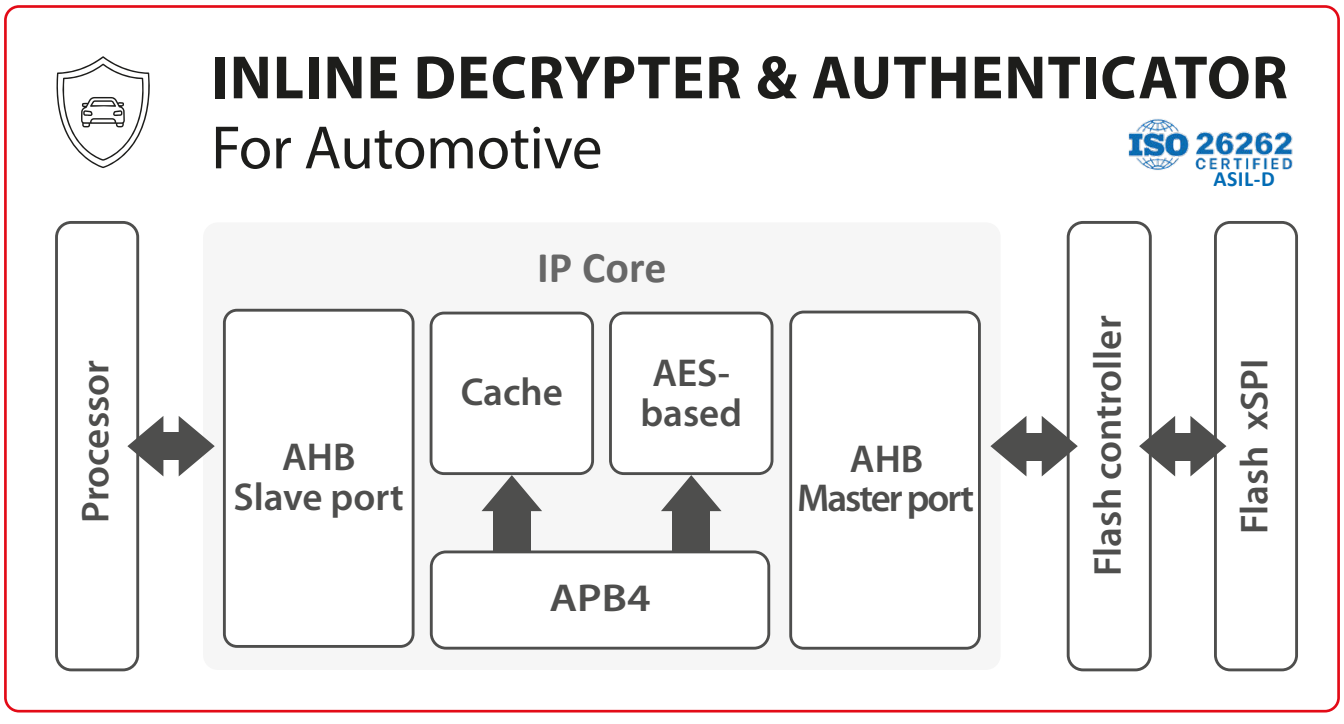
INLINE DECRYPTER & AUTHENTICATOR FOR AUTOMOTIVE

ISO 26262 CERTIFIED ASIL-D

The Inline Decrypter and Authenticator IP core enables on-the-fly execution of encrypted and signed code from Flash. It is used to authenticate and decrypt code located in Flash. In addition it is ISO26262 certified (ASIL-D).

This solution manages multiple regions with software encrypted and signed with different keys. It includes a cache of configurable size and supports AHB interfaces

With this IP core, our customers can take advantage of our expertise in ASIC and FPGA design, cryptography & security applications and the development & integration of re-usable cores & high-level IP solutions. DPA countermeasures option available for applications requiring higher level of security with a very good protection against SPA (Simple Power Analysis) and DPA (Differential Power Analysis).



Features

- XIP (eXecution In Place) of encrypted and signed code from Flash
- ISO26262 certified (ASIL-D)
- AHB Master/Slave interfaces
- Authenticated decryption or authentication only - defined per region
- Scalable cache solution
- SPA/DPA countermeasures (optional)
- Supports multi-region
- Scalable amount of regions
- Secure boot
- ASIC and FPGA

Applications

- Automotive
- General purpose MCU

Implementation aspects

The unique architecture enables a high level of flexibility. The throughput and features required by a specific application can be taken into account in order to select the most optimal configuration for any FPGA or ASIC technology. The single RTL database for all configurations is a guarantee of liability and integration is made very easy due to standard interface (AMBA AHB).

Deliverables

- RTL
- Scripts for synthesis & STA
- Self-checking RTL test-bench
- Technical documentation
- Safety-related documentation (ISO26262)

We are also offering the inline decrypter and authenticator for other applications (i.e. industrial, defence…). For more detailed information, please contact us.

Our memory protection portfolio:

Memory Protection

Securely and transparently write/read data or code from external memory. It leverages our AES Core and the unique architecture enables a high level of flexibility (cache size, performances) and allows it to be used by microcontroller and multi-core architectures

	XiP from Encrypted Flash		External DDR Protection	
	INLINE DECRYPTER Enables on-the-fly execution of encrypted code from Flash. Often used to protect the source code	**INLINE DECRYPTER & AUTHENTICATOR** Enables on-the-fly execution of encrypted and signed code from Flash. It is used to authenticate and code located in Flash	**DDR ENCRYPTER** Enables on-the-fly encryption and authentication to the external memory	**MEMORY & BUS PROTECTION** Enables on-the-fly encryption/ decryption and authentication to the external memory
Configurable/scalable for perfect application fit	✓	✓	✓	Configurable
Multiple regions management	–	✓	✓	–
Protection scheme	Decryption only	Authentication & Decryption	Authentication & Encryption or Encryption only	Authentication & Decryption
Performance	Suitable for up to O-SPI DTR @200 MHz	Suitable for up to O-SPI DTR @200 MHz	ASIC: 100 Gbps FPGA: 40 Gbps	ASIC: 15 Gbps FPGA: 3 Gbps
DPA countermeasures	✓	✓	–	✓
ASIC / FPGA	✓	✓	✓	✓
Scalable data bus width	32	32	32, 64, 128, 256, 512 bits	32, 64, 128 bits
Power/area	Scalable	Scalable	Scalable	Scalable
Interface support	AHB	AHB	AXI	AHB, AXI
	PRODUCT CODE SCZ_IP_MP_Ide	PRODUCT CODE SCZ_IP_MP_IdeAut_S7	PRODUCT CODE SCZ_IP_MP_DDRenc	PRODUCT CODE SCZ_IP_MP_MeBus

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V4.0

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