Vehicle dynamics and domain control applications

S32S Safety Microcontrollers and Microprocessors

Targeted for ASIL-D systems, the S32S247 automotive microcontroller supports safe, secure, high-performance vehicle dynamics, domain control and safety co-processor applications for electric and autonomous vehicles.

TARGET APPLICATIONS

- ASIL-D safety and vehicle dynamics applications such as braking, steering and electric motors that require advanced performance and fault tolerant features.
- HEV/EV domain controller applications where significant performance, safety and memory capability are required to address the sophisticated energy management of multiple power sources.
- High performance safety co-processor to act as a safety checker for main radar, vision and sensor fusion processors.

Designed and manufactured to our proven automotive practices, and with an embedded hardware security engine (HSE), the S32S247 MCU satisfies developers' needs for high performance, safety, security and reliability.

ENABLEMENT TOOLS

- S32S247 evaluation board (EVB)
- GreenBox vehicle electrification development platform for hybrid and electric motor control
- AUTOSAR OS and MCAL
- S32 Design Studio IDE
- Hypervisor firmware
- Hardware security engine firmware
- Strong third-party support
- Simulation and early code development solutions

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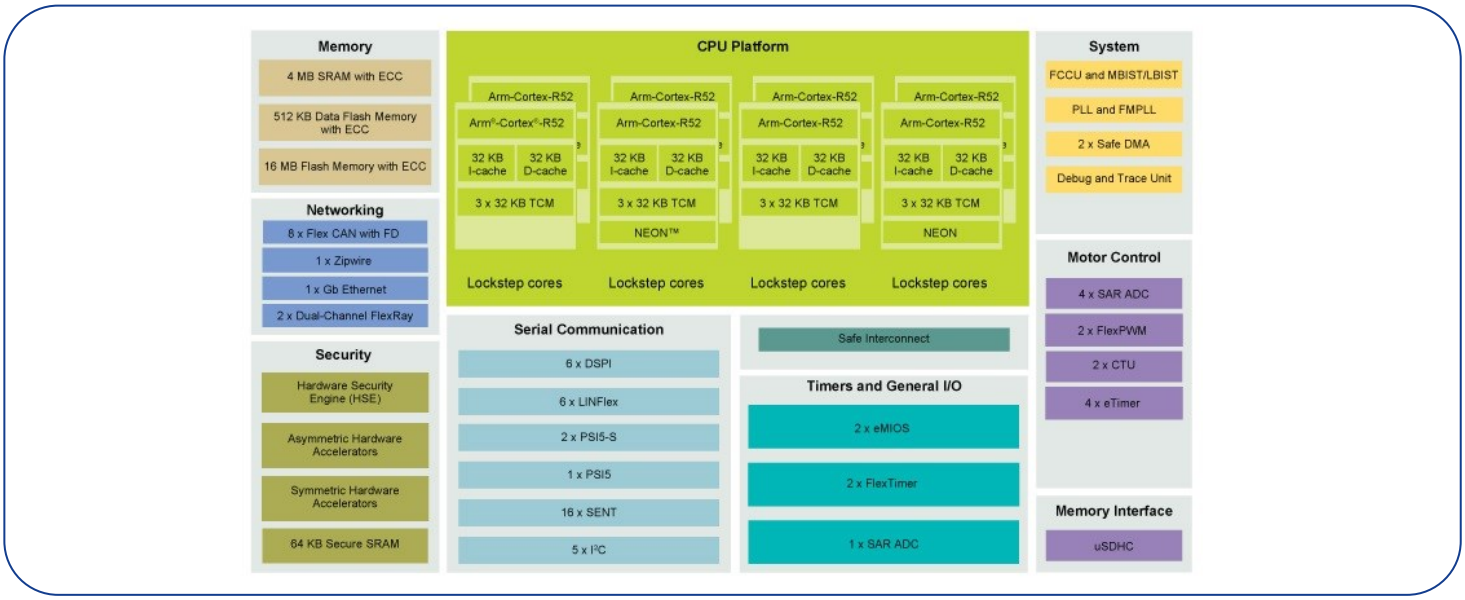
S32S247 SAFETY MCU

Key Features	Benefits
Designed and manufactured to satisfy automotive reliability and ISO 26262 ASIL D functional safety requirements	Enables adherence to ISO 26262 ASIL D standard for automotive safety applications.
Quad 800 MHz Arm® R52 based cores in lockstep (8 cores total) with Arm NEON™	6K+ DMIPS processing horsepower (without acceleration) for management of vehicle dynamics, domain control and safety co-processor applications.
Large integrated flash memory (16 Mbytes initially, options for up to 64 Mbytes)	Large flash memory to support management of multiple sets of application code running on the quad user cores and to manage the storage of multiple versions of code from over-the-air updates.
Advanced flash memory update capability	On-the-Fly, Over-the-Air flash memory update capability with zero processor downtime.
Hardware Hypervisor	Supports multiple sets of user applications software running safely with freedom of interference.
Safety functionality	Advanced safety functionality and fault recovery that helps detect, isolate and resolve faults without system shutdown.
Embedded Hardware Security Engine	User programmable Hardware Security Engine supports public and private key encryption to provide protection against IP theft and malicious hacking.
Full automotive temperature support	AEC-Q100 Grade 1 device with up to -40 to 150° C (junction) support.

S32S247 BLOCK DIAGRAM



SafeAsssure PROGRAM

Functional safety. Simplified.

Our SafeAssure functional safety program is designed to help system manufacturers more easily achieve system compliance with International Standards Organization (ISO) 26262 and International Electrotechnical Commission (IEC) 61508 functional safety standards. The program highlights our solutions—hardware and software—that are optimally designed to support functional safety implementations and come with a rich set of enablement collateral.

SAFE ASSURE by NXP

For more information, visit **www.nxp.com/SafeAssure.**

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