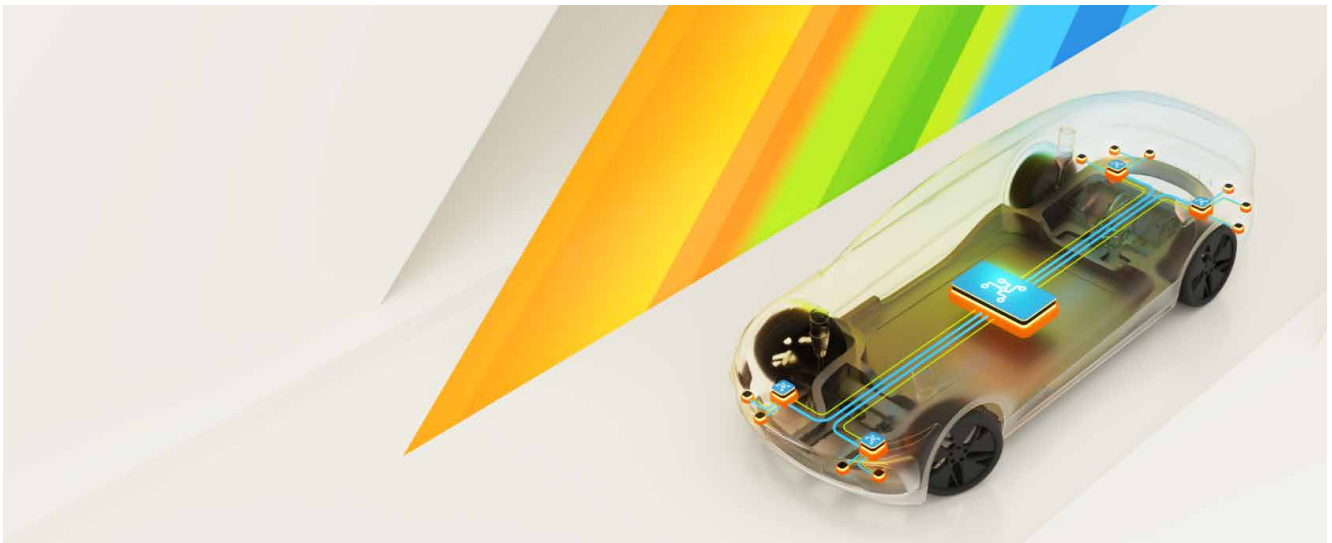# S32J100

S32J100 High-Performance Ethernet Switch and Network Controller

The S32J100 Ethernet Switch and Network Controller provides dynamic and automated configuration options, making it the ideal solution for a wide variety of in-vehicle applications. Whether for central compute, zonal controllers, ADAS, or IVI systems, it consistently delivers the performance and flexibility essential for supporting zonal architectures and software-defined vehicles (SDVs).

With over 80 Gbps of non-blocking switching capacity, it offers a range of port interfaces with speeds from 10 Mbps to 10 Gbps. Supporting the latest TSN standards, it optimizes data flows to ensure safe, secure, and real-time communication. Efficient deep packet inspection (DPI), traffic filtering, and classification are enabled by a high number of TCAM entries, combined with automated rules optimization for enhanced performance.

The embedded hardware security engine provides advanced, hardware-accelerated protection for sensitive data streams, including post-quantum cryptography. Robust security across the entire in-vehicle network is ensured through multiple secure boot options with fast startup times, secure key management, and MACsec support.

PCIe Gen 4 integration with virtualization support is ideal for high-bandwidth, low-latency connectivity to powerful host SoCs, enabling real-time processing and high-performance applications. The high-performance dual-core Arm® R52 CPU, capable of operating in lockstep or splitlock modes with dedicated on-chip memory, delivers robust processing power.

The S32J100 meets a high level of functional safety for automotive applications, achieving ASIL D for compute and systematic approach, and ASIL B for the forwarding path. This is enabled by robust fault detection and advanced mitigation mechanisms that minimize risk in safety-critical systems.

As part of the NXP S32 platform, the S32J family maximizes software reuse, streamlining development and integration across diverse automotive systems. The new S32J family is at the heart of the NXP CoreRide networking solution, bringing flexibility, cost efficiency and speed of deployment to companies developing SDV architectures. The NXP CoreRide networking solution combines hardware and software to meet the evolving communication needs of SDVs.

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