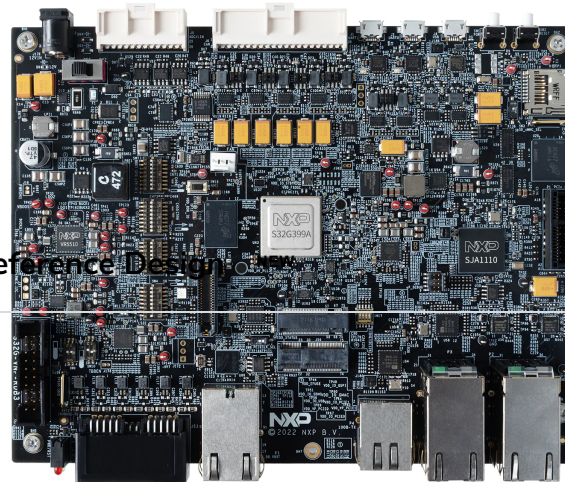


S32G3 Vehicle Networking Reference Design

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The S32G-VNP-RDB3 is a compact, highly optimized and integrated board engineered for vehicle service-oriented gateways (SoG), domain control applications, high-performance processing, safety and security applications.

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Based on octal Arm® Cortex®-A53 cores (with optional cluster lockstep) and quad, dual-core lockstep Arm Cortex-M7 cores, the S32G-VNP-RDB3 offers a high-performance computing capacity and rich input/output (I/O), high levels of compute, real-time network performance, multi-Gigabit packet acceleration and security for a variety of typical and new automotive applications.

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Product Details

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Block Diagram

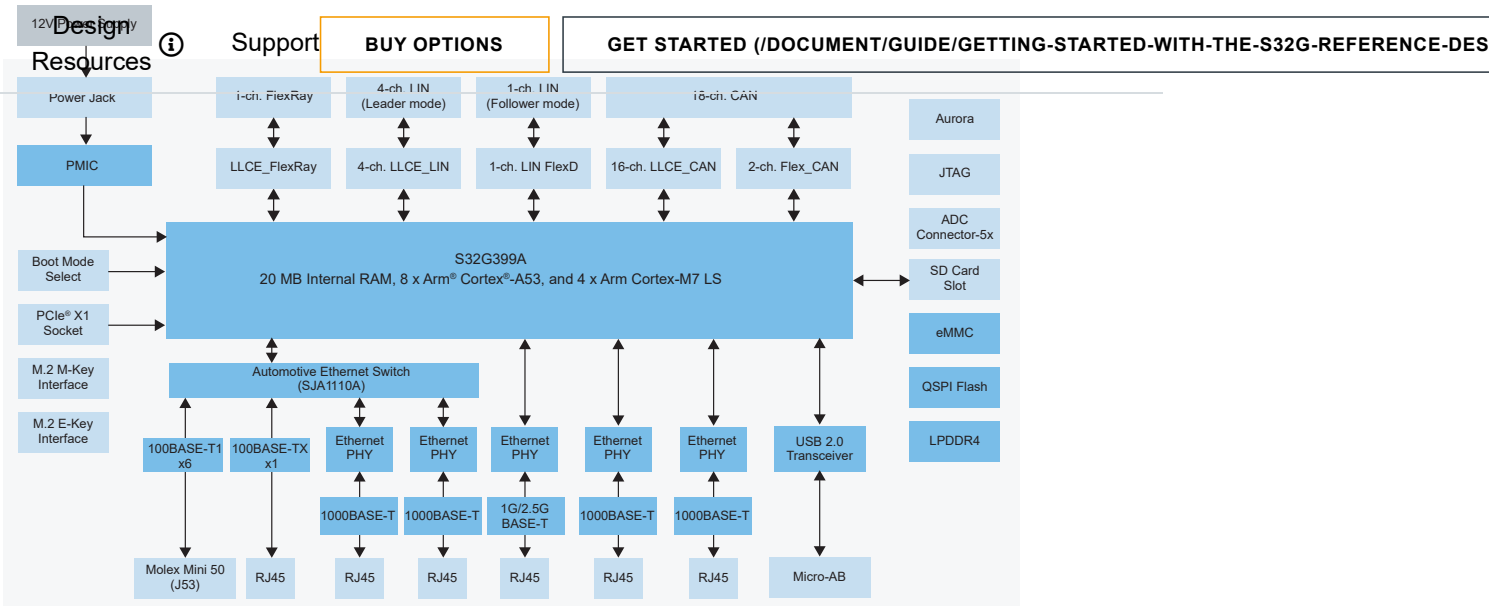
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Supported Devices

Automotive Ethernet Switches

- **SJA1110** (/products/interfaces/ethernet-/automotive-ethernet-switches/multi-gig-safe-and-secure-tsn-ethernet-switch-with-integrated-100base-t1-phys:SJA1110): Multi-Gig Safe and Secure TSN Ethernet Switch with Integrated 100BASE-T1 PHYs

Single and Multi-Channel LIN Transceivers

- **TJA1021** (/products/interfaces/automotive-lin-solutions/iso17987-lin-2-1-sae-j2602-transceiver:TJA1021): ISO17987 LIN 2.1/SAE J2602 Transceiver

3.3 V / 5 V IO CAN Transceivers

- **TJA1043** (/products/interfaces/can-transceivers/can-with-flexible-data-rate/high-speed-can-transceiver-with-standby-and-sleep-mode:TJA1043): High-Speed CAN Transceiver with Standby and Sleep Mode

CAN Signal Improvement

- **TJA1463** (/products/interfaces/can-transceivers/can-signal-improvement/can-signal-improvement-capability-transceiver-with-sleep-mode:TJA1463): CAN Signal Improvement Capability Transceiver with Sleep Mode

Secure CAN Transceivers

- **TJA1153** (/products/interfaces/can-transceivers/secure-can-transceivers/secure-hs-can-transceiver-with-sleep-mode:TJA1153): Secure HS-CAN Transceiver with Sleep Mode

Power Management

Safety SBCs

- **VR5510** (/products/power-management/pmics-and-sbcs/pmics/multi-channel-9-pmic-for-s32g-processor-8-high-power-1-low-power-fit-for-asil-d-safety-level:VR5510): Multi-Channel (9) PMIC for S32G Processor – 8 High Power, 1 Low Power, Fit for ASIL D Safety Level

PMICs

- **PF5300** (/products/power-management/pmics-and-sbcs/pmics/12-a-core-supply-regulator-with-avp-and-watchdog:PF5300): 12 A Core Supply Regulator with AVP and Watchdog

Processors and Microcontrollers

Features

Hardware Features

- Supports service-oriented gateway and domain controller applications
- Multiple network interfaces, featuring 18 CAN/CAN FD and 12 Ethernet ports
- Supports low-power mode and multiple wake-up sources
- Supports two M.2 modules (M-key slot, E-key slot)
- ISO 26262 support by using safety components and architecture

Power supply

- 12V AC-DC adapter

Interfaces

- LIN, CAN/CAN FD, 100BASE-T1, 1000BASE-T / 2.5GBASE-T, 100BASE-TX, 1000BASE-T, FlexRay, USB, PCIe, JTAG, UART, AURORA, M.2 slots

Applications

Automotive

Automotive Access Point (/applications/automotive/vehicle-networking/automotive-access-point:AUTOMOTIVE-ACCESS-POINT)

Automotive Data Logger (/applications/automotive/vehicle-networking/automotive-data-logger:AUTOMOTIVE-DATA-LOGGER)

Automotive Zone Controller (/applications/automotive/vehicle-networking/automotive-zone-controller:AUTOMOTIVE-ZONE-CONTROLLER)

Domain Controllers

Firmware Over-the-Air (FOTA) (/applications/automotive/vehicle-networking/firmware-over-the-air-fota:FOTA)

Gateway (/applications/automotive/vehicle-networking/gateway:GATEWAY)

In-Vehicle Networks

Safety Processors

Service-Oriented Gateway (/applications/automotive/connectivity/service-oriented-gateway:SERVICE-ORIENTED-GATEWAY)

Vehicle Compute

Zonal Gateways