

S32G VEHICLE NETWORK PROCESSING REFERENCE DESIGN BOARD 2 (S32G-VNP-RDB2)



The S32G-VNP-RDB2 is a compact, highly optimized and integrated reference design board featuring the S32G vehicle network processor. With its high-performance computing capacity and rich input/output (I/O), this board can provide reference for a variety of automotive applications such as service-oriented gateways, vehicle central compute, domain controllers, safety processors and black boxes. Carmakers, suppliers and software ecosystem partners can directly use the RDB to help accelerate development for shorter time-to-market.

TECHNICAL HIGHLIGHTS

- Supports service-oriented gateway, vehicle compute and domain controller applications
- Hardware Security Engine (HSE), Ethernet Packet Forwarding Engine (PFE), and Low Latency Communications Engine (LLCE)
- Multiple network interfaces with 18 CAN/CAN FD and 12 Ethernet ports
- Supports low-power mode and multiple wake-up sources
- Strengthens safety design with power management IC

FEATURES

- Hardware key features:
 - 1 x NOR flash (64 MB)
 - 1 x eMMC (32 GB), 1x SD card slot
 - 1 x LPDDR4 (4 GB)
 - 6 x 100BASE-T1 Ethernet
 - 5 x 1000BASE-T Ethernet
 - 1 x 100BASE-TX Ethernet
 - 18 x FlexCAN
 - 5 x LINFlexD
 - 1 x FlexRay
 - 1 x USB 2.0
 - 5 x ADC, 1x DSPI, 1x I²C
 - 1 x PCIe X1
 - 1 x M.2 M-key, 1x M.2 E-key
- Supports functional safety features:
 - ASIL D S32G274A vehicle network processor
 - ASIL D VR5510 power management IC
 - ASIL B SJA1110A Ethernet switch
 - Fault management and reset logic circuits

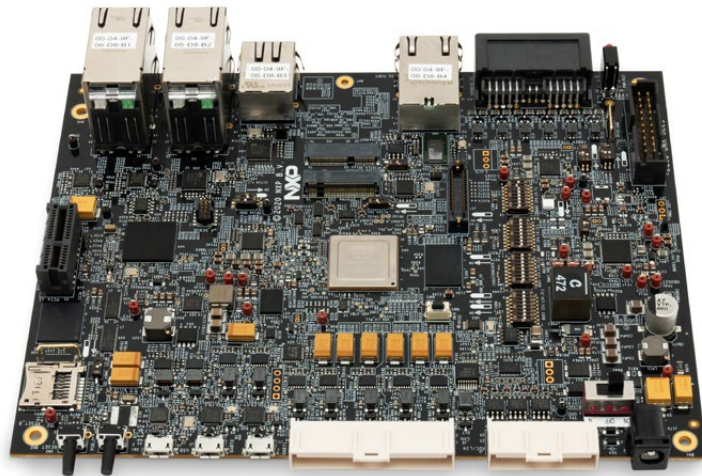
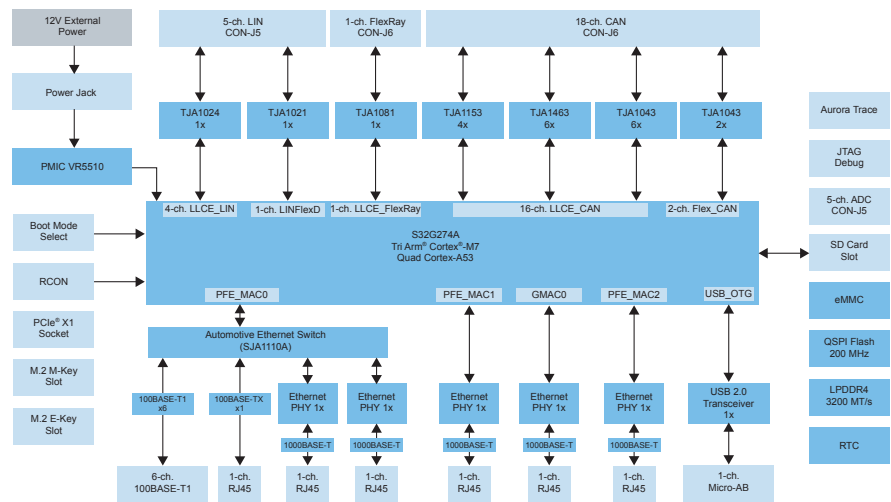
ENABLEMENT TOOLS

- NXP S32 Design Studio, Yocto, EB tresos™
- Linux®, FreeRTOS™, Real-Time Drivers (RTD)
- Compiler: Green Hills®, gcc
- Debugger: Lauterbach, S32G Debug Probe

S32G274A PROCESSOR SPECIFICATIONS

Core	3 x Arm® Cortex®-M7 LS pairs and 4 x Cortex-A53 cores (opt. cluster LS)		
Memory	8 MB system RAM, 32 KB standby RAM, DRAM I/F, QuadSPI I/F, eMMC/SDXC		
Communications	FlexCAN, LINflexD, FlexRay, DSPI, I ² C, PCIe® 3.0, USB 2.0		
Ethernet Networks	1-Gbit MAC, 1-Gbit/2.5-Gbit MAC (PFE_MAC0), 1-Gbit MAC (PFE_MAC2), 1-Gbit MAC (PFE_MAC1)		
Security	HSE, XRDC, eFuse, Lifecycle	Safety	2 x Safe DMA, FCCU and LBIST/MBIST
ADC/Timers	12-bit SAR ADC, System timer module, software watchdog timer, periodic interrupt timer, FlexTimer, real-time clock		

SYSTEM BLOCK DIAGRAM



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