**MicroSys**
Creating Embedded Systems

miriac® MPX-S32G274A

The world's first System-on-Modules based on NXP® S32G vehicle network processors are equipped with the NXP® S32G2 processor. They offer more than 10 times the real-time performance and networking throughput of NXP's previous vehicle network devices and address the next generation of fail-safe and cyber-secure connected mobility and controller applications.

- 4 Arm® Cortex®-A53 cores and 3 Arm® Cortex®-M7 cores including lockstep support
- Comprehensive connectivity including 18x CAN FD + dedicated protocol engine, furthermore FlexRay, LIN, SPI, Ethernet with TSN, PCI Express®, USB and I²C
- Hardware Security Engine for secure boot and accelerated security services
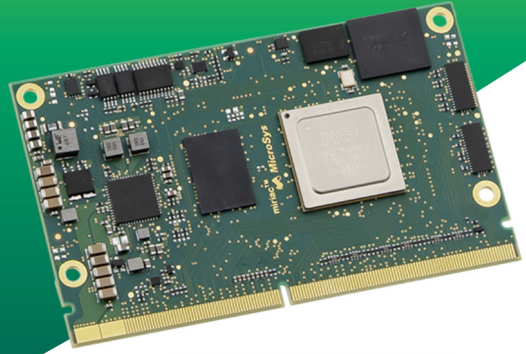
Vehicle gateway platform with massive native CAN support

Since the MPX-S32G274A System-on-Modules offer multiple native CAN interfaces as well as comprehensive FlexRay, LIN and Ethernet support target markets can be found in real-time connected vehicles, mobile machinery and automotive test and measurement equipment. Further application areas include data loggers, edge gateways and fail-safe programmable logic controllers (PLCs).

Features ▬
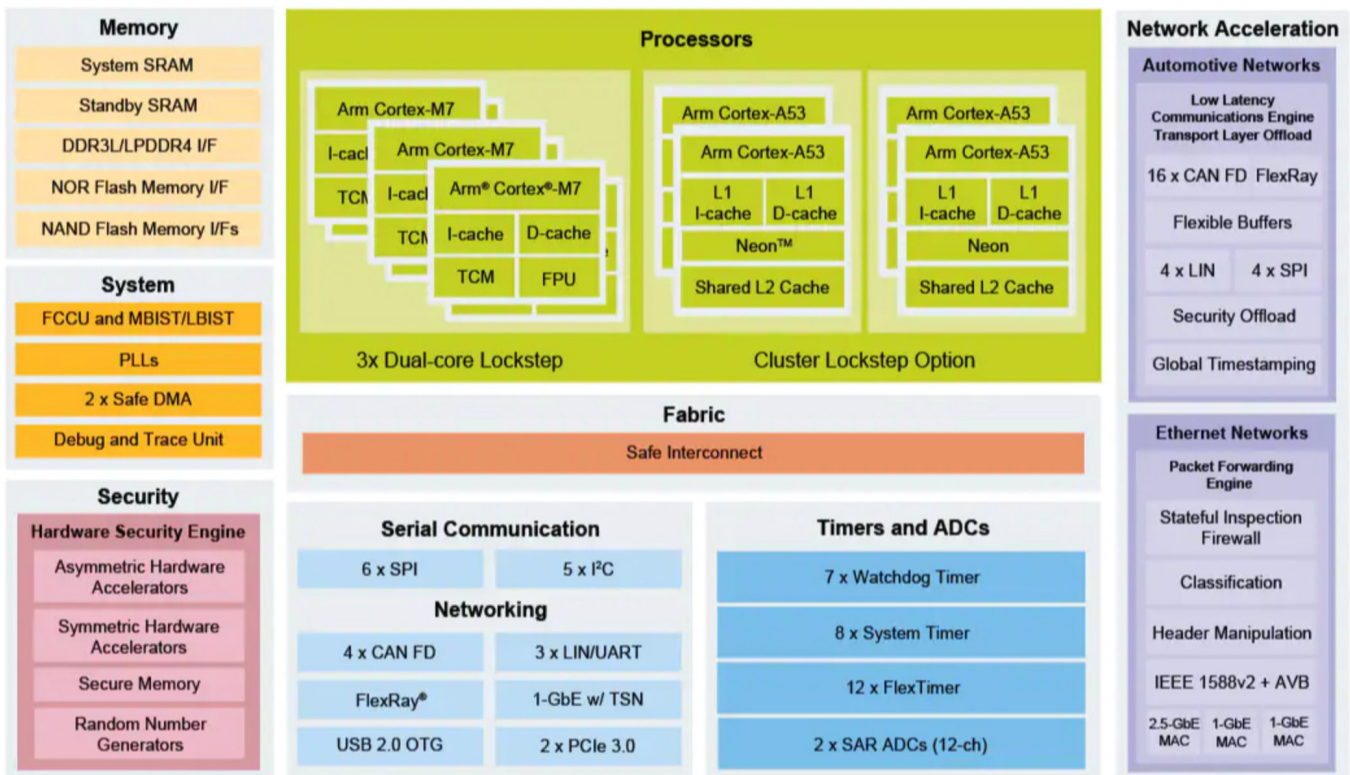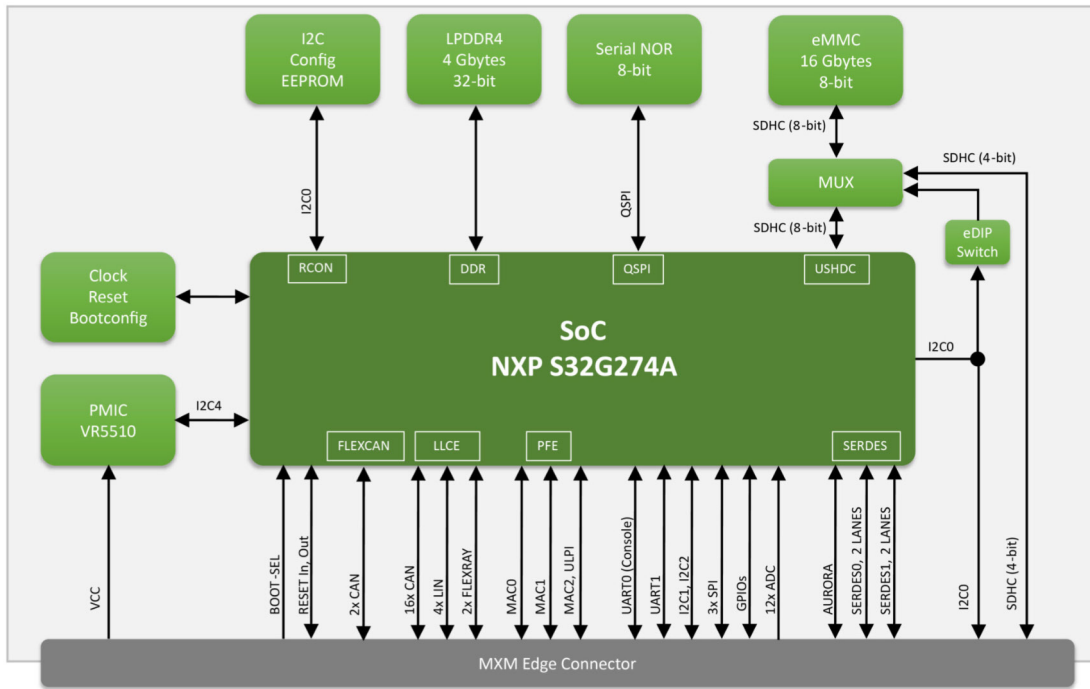
CPU

Architecture	Arm® Cortex®-A53
Processor	NXP® S32G274A CPU: 4 Arm® Cortex®-A53 64-bit cores at 1Ghz, 3 Arm® Cortex® M7 dual-cores at 400Mhz
DRAM	4 GB 32-bit soldered LPDDR4 RAM at 3200MT/s

Memory

Flash	64 MB QSPI Flash
Flash Card	Interface for external SD card multiplexed with eMMC
Boot Flash	Boot select: XSPI, eMMC or external SD card
eMMC	up to 32 GB

Ethernet

RGMII	3x
SGMII	1x 2.5 Gbs

High Speed IO

SerDes lanes	4x
ULPI-USB	1x
PCIe	Yes

IO

FlexSPI	4x
UART	2x
CAN FD	18x
FlexRay	2x
LIN	4x
I2C	4x
Analog Inputs (ADCs)	12x
GPIOs	Yes
JTAG Debug Interface	Yes
Aurora Interface	Yes

Security / Safety

Security	Hardware Security Engine (HSE) for secure boot and accelerated security services
Safety	• Advanced hardware and software for safety applications • Optional: Certification Kit • Optional: AEC-Q100 Grade 3 (or I): -40°C to 85°C

Operating Condition

Power Supply Voltage	Single DC power input (+9 V to +36 V)
Optional Power Supply Voltage	Single DC power input (+6 V to +36 V)
Typical Power Consumption	3,5 W
RTC	RV-3028-C7
Temperature	0 °C to 70 °C
Optional Extended Temperature	-40 °C to +85 °C

Mechanical

Dimensions	82 mm x 50 mm
Connector Type	MXM3.0

Software / Additional

|	
Software Support	• Linux • VxWorks (on request) • Others (on request)
Additional	• All I/O pins available on 314-pin edge connector • Low Latency Communication Engine (LLCE) for vehicle networks acceleration • Packet Forwarding Engine (PFE) for Ethernet networks acceleration • Dev Kit available for immediate start, includes power supply, cables. Linux on SD card

Our standard product versions offer what we consider to be the optimum configuration in terms of performance, price, usage and TDP. The product features lists specify the maximum range of functions per interface. However, not all interfaces or functions are always available in parallel. Flexible SERDES multiplexing is one of the reasons for this. In addition, we provide multiple memory expansion options and are also happy to accommodate specific customer wishes. So do not hesitate to contact us directly to discuss your desired configuration.
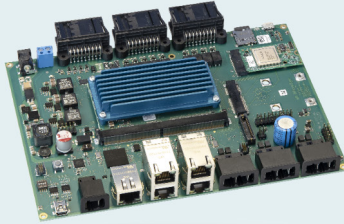
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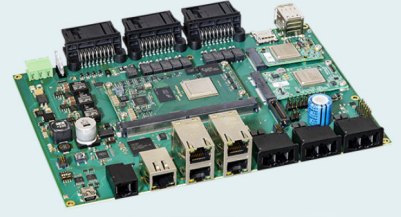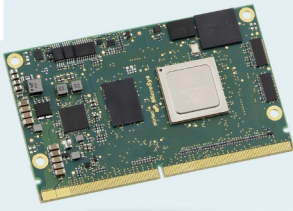| Name	Code	Description	Status
miriac® MPX-S32G274A	858102	4 Arm® Cortex®-A53, 1.0 GHz, 4 GB DDR4L w ECC, 64 MB NOR Flash, 16 GB eMMC, 0 °C to 70 °C, w SEC	active
miriac® MPX-S32G274A	858103	4 Arm® Cortex®-A53, 1.0 GHz, 4 GB DDR4L w ECC, 64 MB NOR Flash, 32 GB eMMC, -40 °C to 85 °C, w SEC	active
Development Kit basic for miriac® MPX-S32G274A	8590	• miriac® MPX-S32G274A • CRX-S32G • incl. BSP and accessories	active

Take a look at related products
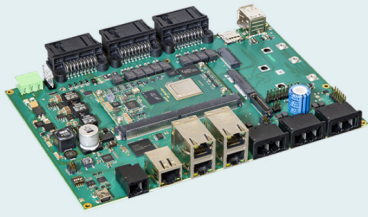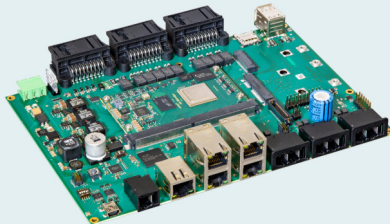
miriac® SBC-S32G274A

miriac® AIP-S32G274A

miriac® AIP-S32G399A

miriac® MPX-S32G399A

miriac® SBC-S32G399A

CRX-S32G

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