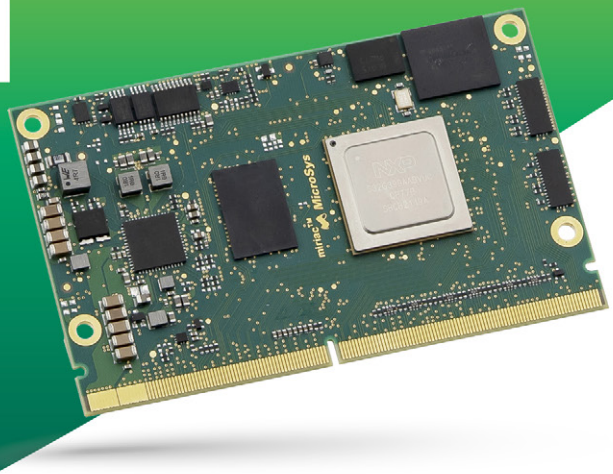
MicroSys
Creating Embedded Systems

miriac® MPX-S32G399A

THE ELECTRONICS INDUSTRY AWARDS 2023

Compared to our NXP® S32G2 processor based 1st Gen modules, our NXP® S32G399A processor based MPX-S32G399A System-on-Modules offer up to 2.5x times more applications processing performance, extended memory and higher networking bandwidth and address performance-demanding secure, connected mobility and controller application.

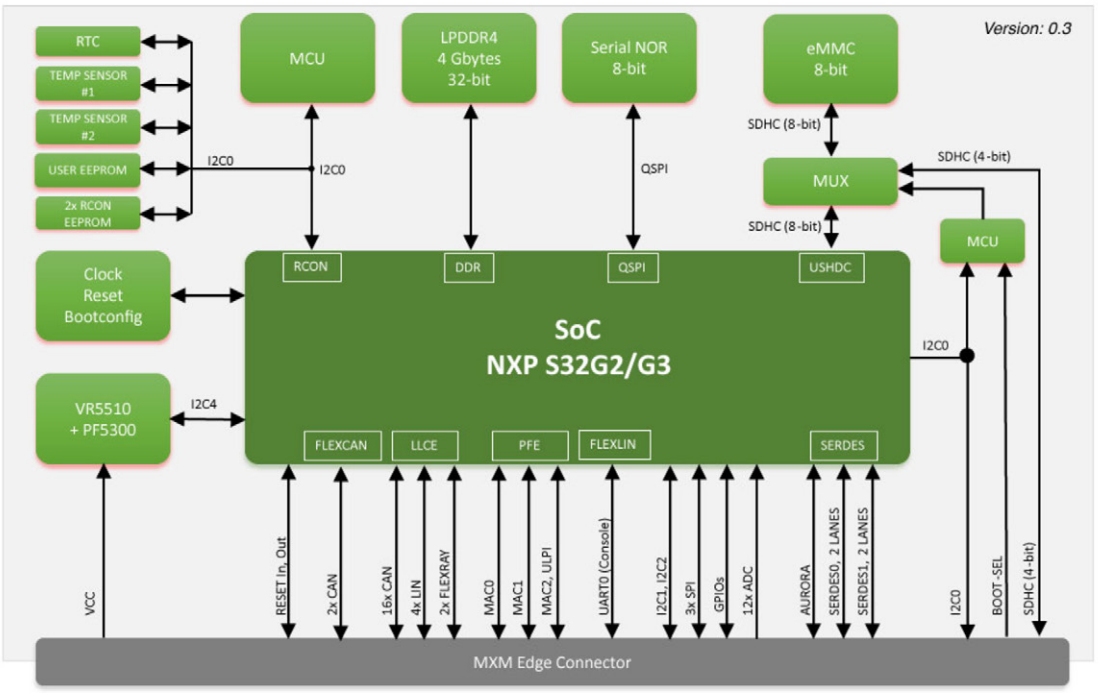
- 8 Arm® Cortex®-A53 cores and 4 Arm® Cortex®-M7 cores including lockstep support
- Comprehensive connectivity including 18x CAN FD + dedicated protocol engine, furthermore FlexRay, LIN, SPI, Ethernet with TSN, PCI Express®, USB and I²C
- Hardware Security Engine for secure boot and accelerated security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

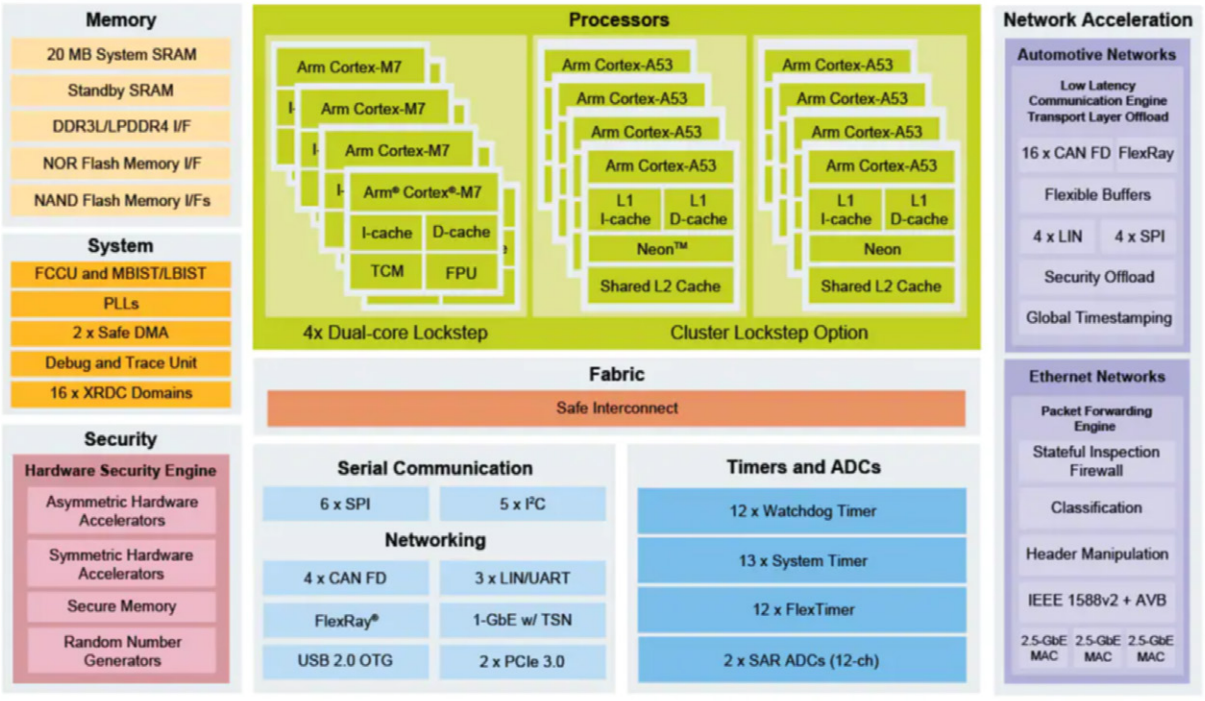


MicroSys' 2nd Gen of System-on-Modules for vehicle networks based on the NXP® S32G399A processor

Since the MPX-S32G399A System-on-Modules offer multiple native CAN interfaces, as well as FlexRay, LIN and Ethernet support, target markets include 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).

Block Diagrams





Features

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.

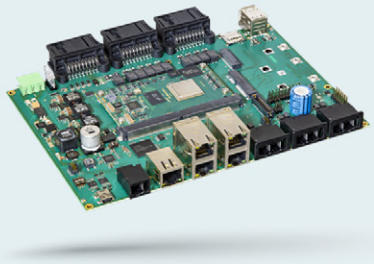
CPU	
Architecture	Arm® Cortex®-A53
Processor	NXP® S32G399A CPU: 8 Arm® Cortex®-A53 64-bit cores, 4 Arm® Cortex®-M7 dual-core lockstep pairs
DRAM	4 GB 32-bit soldered LPDDR4 RAM at 3200 MT/s
Memory	
Flash	64 MB QSPI Flash
Flash Card	Interface for external SD-card multiplexed with eMMC
Boot Flash	Boot select: XSPI, eMMC or external SD card
eMMC	Up to 32 GB
Ethernet	
RGMII	3x
SGMII	3x 2.5 Gbps
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

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)
Power Management	Yes
RTC	RV-3028-C7
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

Order Info

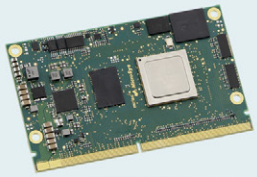
Name	Code	Description	Status
miriac® MPX-S32G399A	861703	8 Arm® Cortex®-A53, 1.3 GHz, 4 GB LPDDR4 w ECC, 64 MB NOR Flash, 16 GB eMMC, -40 °C to +85 °C, w SEC	active
Development Kit basic for miriac® MPX-S32G399A	8629	• miriac® MPX-S32G399A • CRX-S32G • incl. BSP and accessories	active

Take a look at related products



miriac® SBC-S32G274A

miriac® AIP-S32G274A



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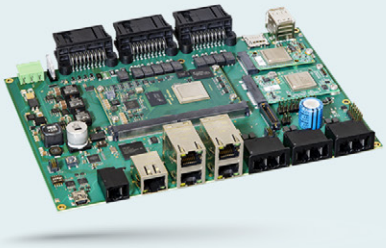

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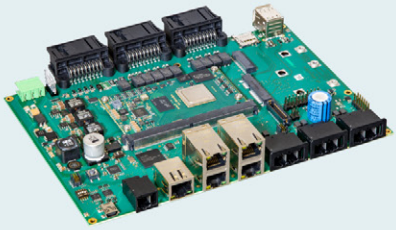
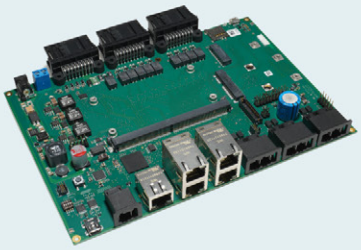


miriac® SBC-S32G399A



CRX-S32G

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