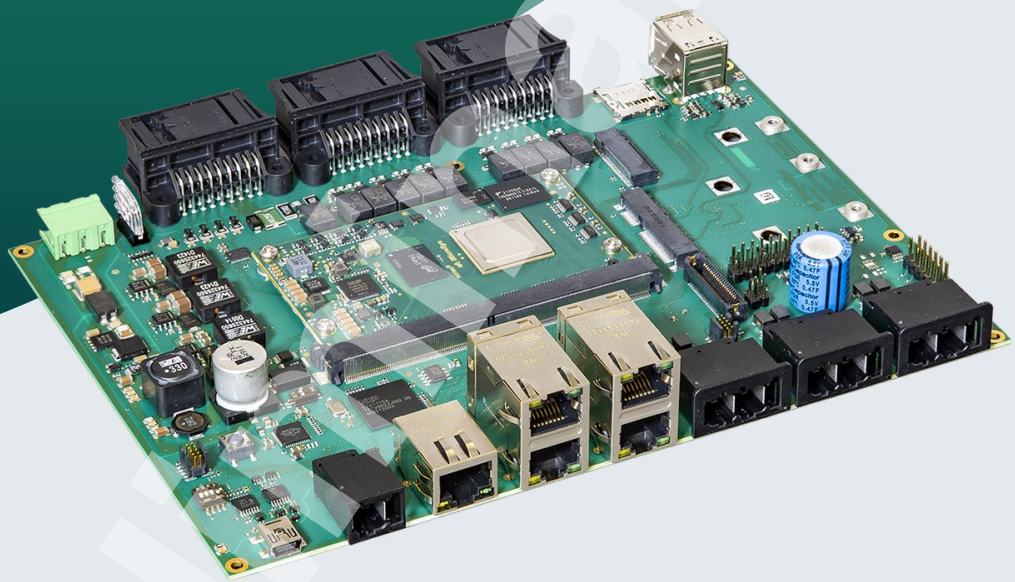
MicroSys
Creating Embedded Systems

Arm® Architecture

miriac® SBC-S32G399A

NXP® S32G399A processor based SBCs for vehicle network computing



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Single Board Computer at a glance

- 8 Arm® Cortex®-A53 cores
- 4 Arm® Cortex®-M7 lockstep cores for real-time applications
- Automotive Ethernet Switch SJA1110
- Time Sensitive Networking (TSN)
- Automotive Buses: CAN, FlexRay, LIN

GOLD PARTNER NXP

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Product Description

The miriac® SBC-S32G399A Single Board Computer is based on NXP's S32G399A vehicle network processor. It integrates a miriac® MPX-S32G399A System on Module designed by MicroSys. The system combines numerous high speed Ethernet interfaces for automotive networking - provided by the SJA1110 automotive switch - with standard automotive busses like Flexray (2x), LIN (4x) or CAN (16x plus 2x CAN FD). It is a communication and compute thoroughbred for innovative automotive and industrial sensor fusion applications.

Specifications

CPU	
Architecture	Arm® Cortex®-A53
Processor	NXP® S32G399A CPU: 8 Arm® Cortex®-A53 64-bit cores, 4 Arm® Cortex®-M7 dual-cores
DRAM	4 GB 32-bit soldered LPDDR4 RAM at 1600MT/s
Memory	
Flash	64 MB QSPI Flash
Flash Card	Yes
Boot Flash	Boot select: XSPI, eMMC or external SD card
eMMC	Up to 32 GB
Ethernet	
1GbE	1x
1000BASE-T1	1x
100 Mb	1x
100BASE-T1	6x
TSN / IEEE 1588	Yes
High Speed IO	
USB 2.0	1x
miniUSB	1x
IO	
CAN FD	18x
FlexRay	2x
LIN	4x
analog inputs (ADCs)	12x
GPIOs	Yes
JTAG Debug Interface	Yes
Aurora Interface	Yes
Extension Card Modules	
miniPCIe	1x
m.2	1x (type M)

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Specifications

Operating Condition	
Power Supply Voltage	Single DC power input (+9 V to +36 V)
RTC	Yes
RTC-Buffer	Supercap
Temperature	0 °C to 70 °C
Mechanical	
Dimensions	200 mm x 140 mm
Software / Additional	
Software Support	■ Linux ■ VxWorks (on request) ■ Others (on request)
Additional	■ Development Kit for immediate start up; includes power supply, Linux pre-installed

General note:
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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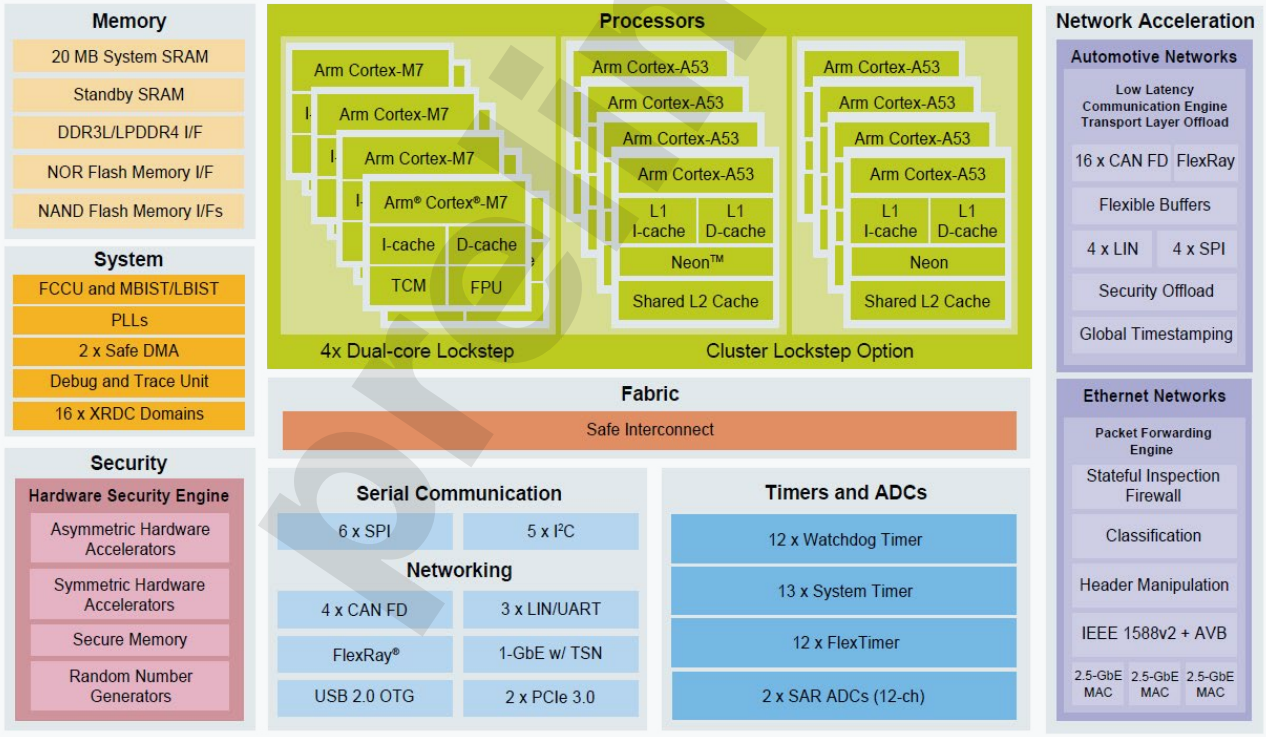
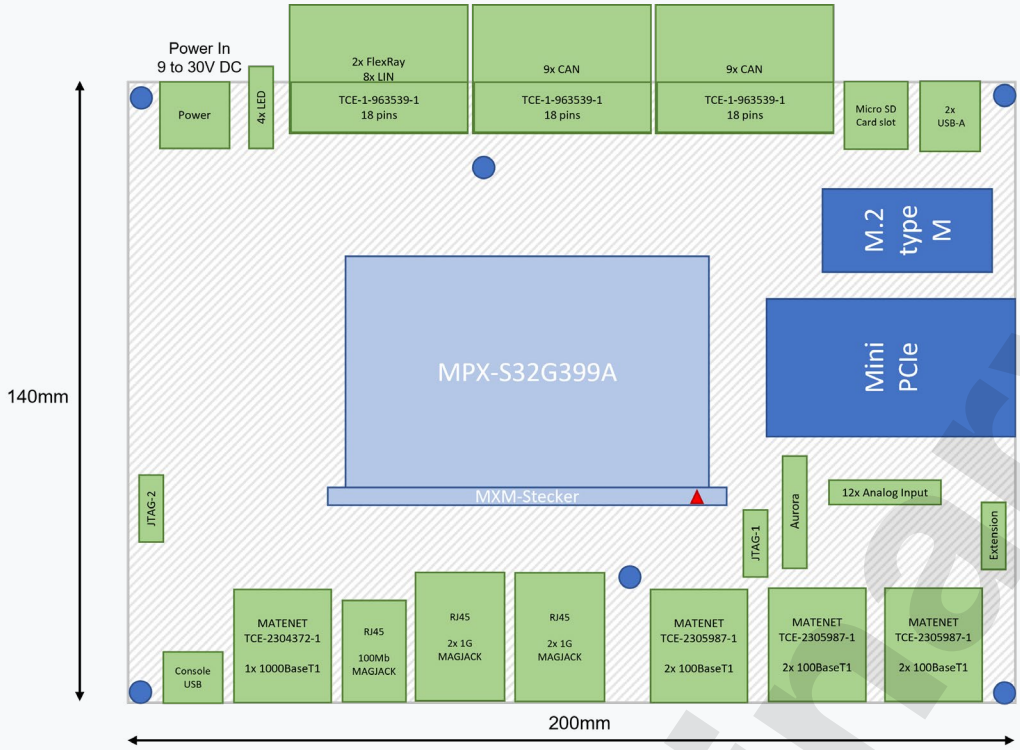
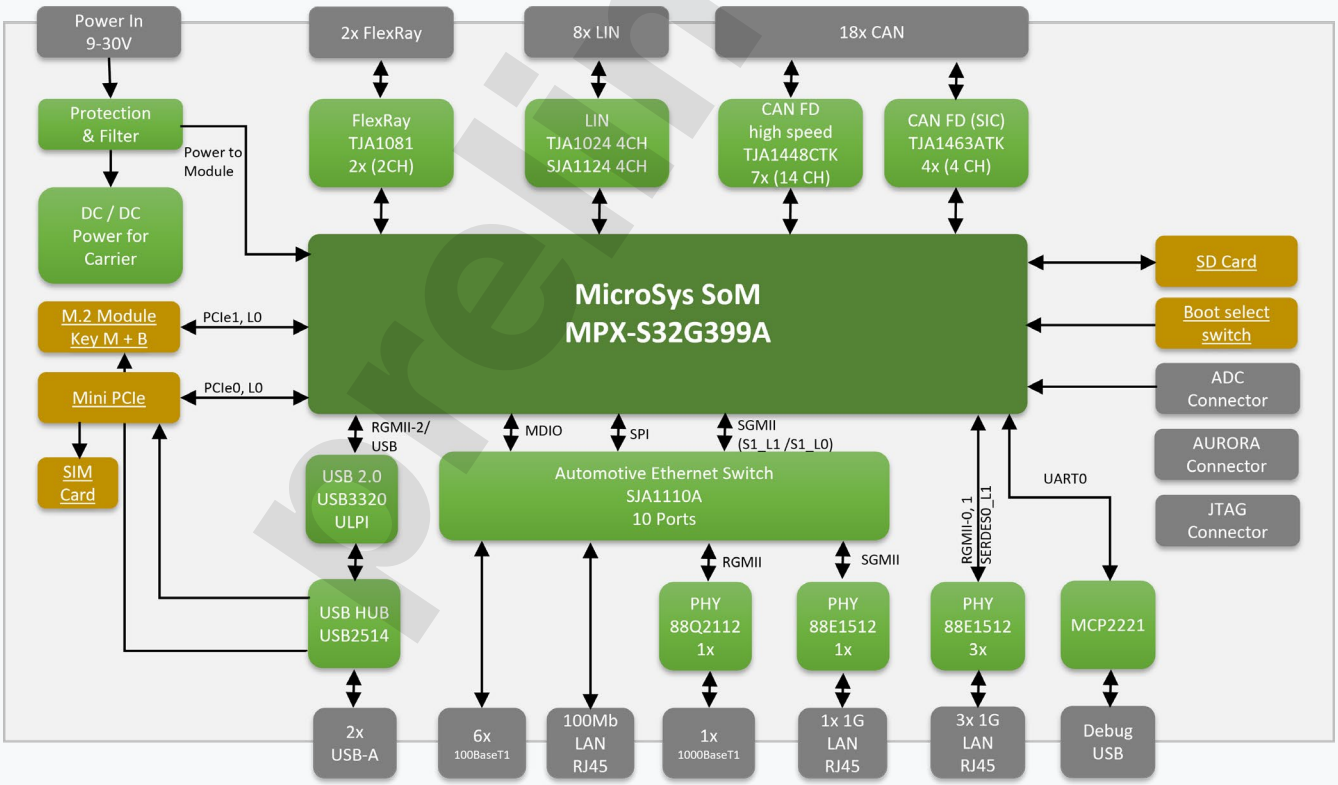
Block diagram

S32G399A BLOCK DIAGRAM



Block diagram





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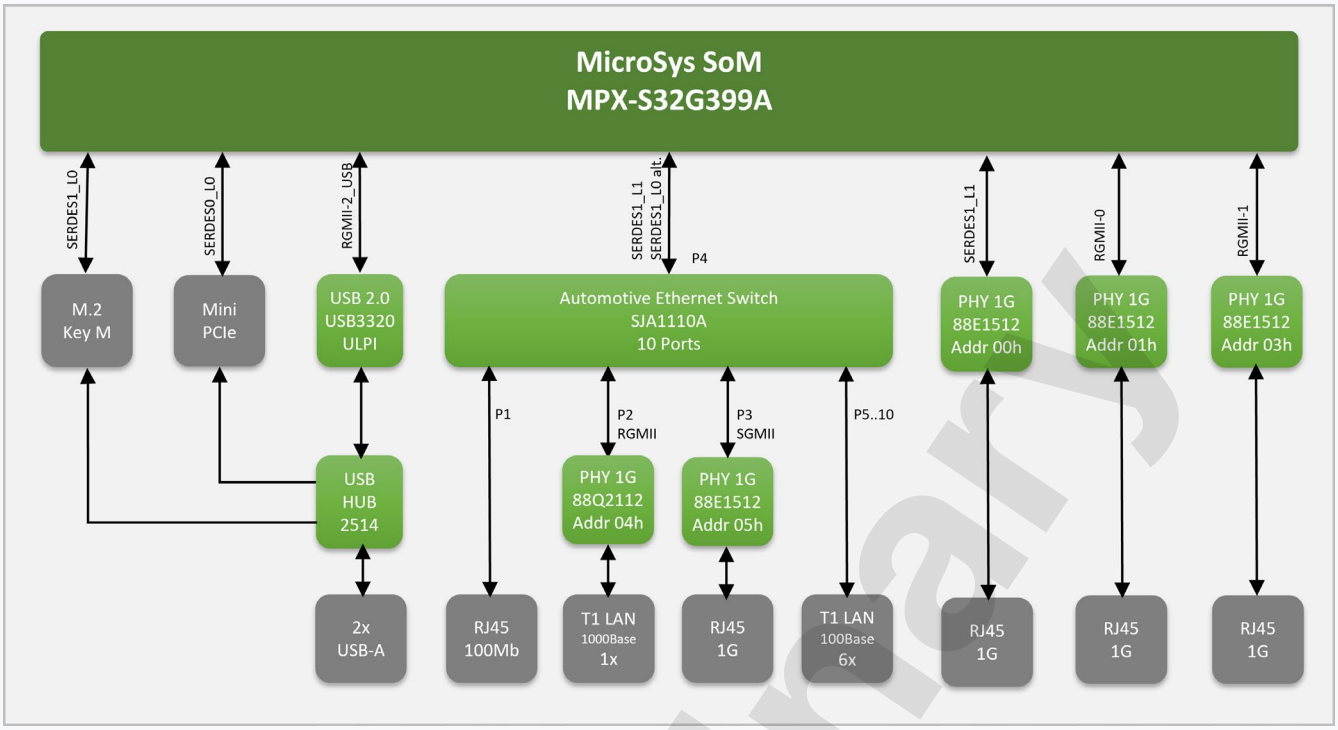

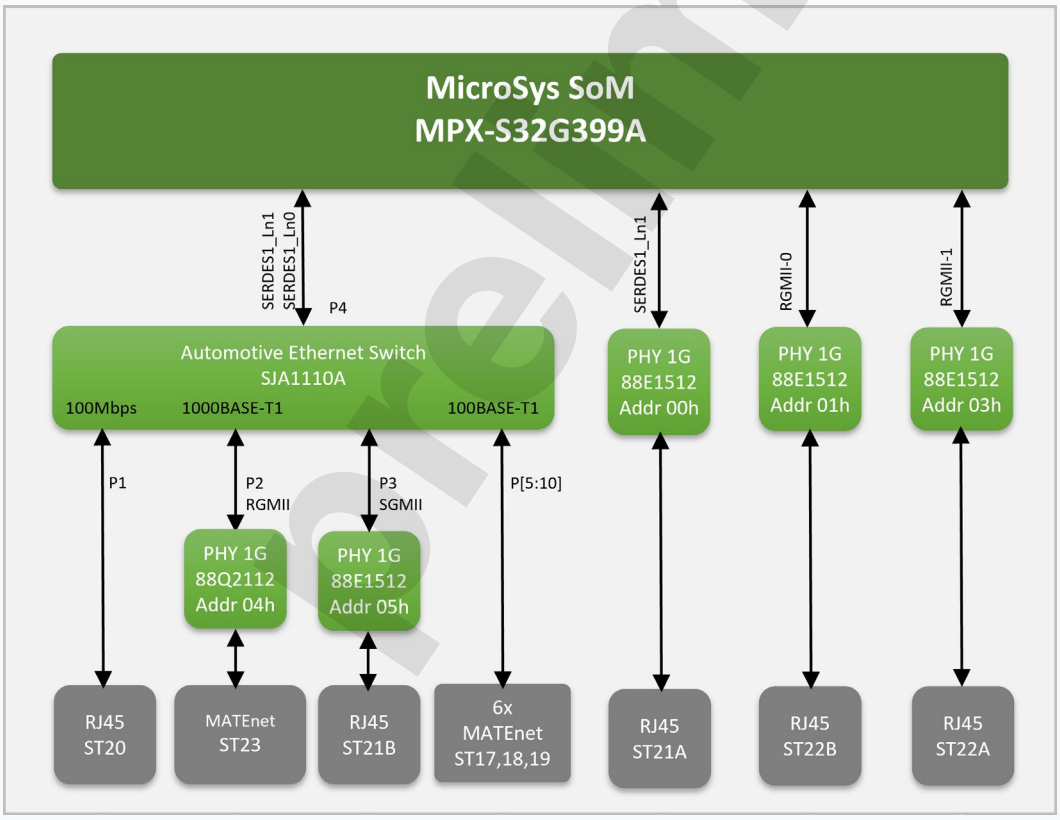

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Order Information

Name	Code	Description	Status
Development Kit basic for miriac® MPX-S32G399A	TBD	8 Arm® Cortex®-A53, 1.0 GHz, 4 GB LPDDR4 w ECC, 64 MB NOR Flash, 16 GB eMMC, 0 °C to 70 °C, w/o SEC	coming 2023

Related Products

Name	Code	Description	Status
miriac® MPX-S32G274A	858103	Vehicle gateway platform with massive native CAN support	active
miriac® SBC-S32G274A	859011	NXP® S32G399A processor based SBCs for vehicle network computing	active
miriac® AIP-S32G274A	859013	High-performance embedded AI platforms	active
miriac® MPX-S32G399A	TBD	The 2nd Gen System-on-Module based on the NXP® S32G399A vehicle network processor	coming 2023
miriac® AIP-S32G399A	TBD	High-performance embedded AI platforms	coming 2023

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