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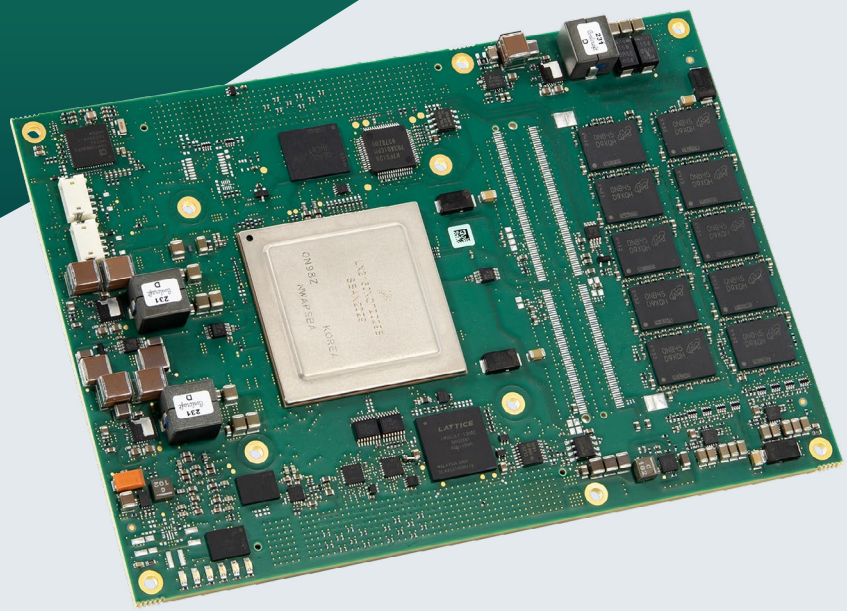
Arm® Architecture

miriac® MPX-LX2160A SoM

Rugged edge server class SoM for high-end communication applications



System-On-Modules at a glance

- NXP® Layerscape® LX2160A with 16 Arm® Cortex®-A72 64-bit cores up to 2.2 GHz
- 24 SerDes lanes (PCIe Gen3 x8, 100 GbE/40 GbE/25 GbE/10 GbE, SATA)
- 2x DDR4 controllers (up to 3200 MT/s with ECC) support up to 128 GB DDR4 RAM, ECC
- Boot select: XSPI, eMMC or external SD card
- Single 5-12 V DC input supply voltage range

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Product Description

NXP's flagship processor, the LX2160A, offers 16 Arm® Cortex®-A72 cores at 2.2GHz. In addition, the LX2160A offers 24 SerDes lanes (PCIe Gen3 x8, 100 GbE/40 GbE/25 GbE/10 GbE, SATA) and up to 128 GB DDR4 RAM driven by 2x DDR4 controllers (up to 3200 MT/s with ECC). This means that the MPX-LX2160A module is designed for applications that are highly compute-intensive and require numerous high-speed I/O.

Specifications

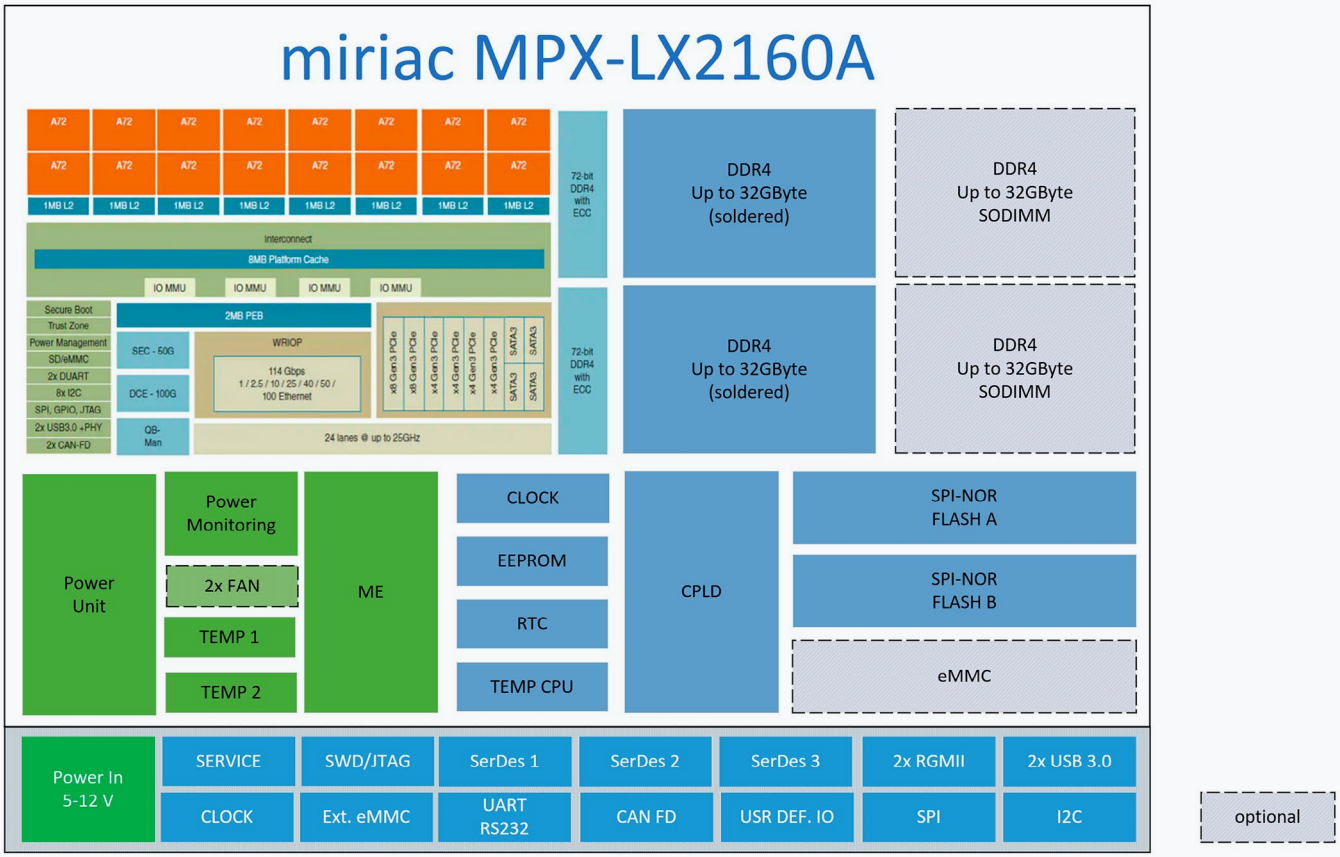
CPU	
Architecture	Arm® Cortex®-A72
Processor	NXP® Layerscape® LX2160A with 16 Arm® Cortex®-A72 64-bit cores up to 2.2 GHz
DRAM	Up to 128 GB DDR4 RAM & optional ECC, up to 3200MT/sec Up to 4 ranks using a combined design: discrete & SODIMM
Memory	
Flash	Up to 2 Gb Octal SPI Flash at up to 200MHz, double operation / golden image
Flash Card	Interface for external SD card
Boot Flash	Boot select: XSPI, eMMC or external SD card
eMMC	Up to 256 GB, HS400, JEDEC 5.1 standard support
Ethernet	
100GbE	Yes
40GbE	Yes
25GbE	Yes
10GbE	Yes
1GbE	Yes
1000BASE-T1	Yes
High Speed IO	
SerDes lanes	24x (PCIe Gen3 x8, 100GbE/40GbE/25GbE/10GbE, SATA)
USB 3.0	2x
USB 2.0	Yes
PCIe	PCIe Gen3 x8
SATA	Yes
IO	
Flex SPI	1x
UART	2x
CAN FD	2x
I²C	6x
GPIOs	Yes
JTAG Debug Interface	Yes
Security / Safety	
Security	Trust Architecture
Safety	Lockstep / ASIL
Operating Condition	
Power Supply Voltage	Single 5 to 12 V DC input supply voltage range
Typical Power Consumption	25 W
Power Management	Yes
RTC	PCF85263
Temperature	0 °C to 70 °C
Optional Extended Temperature:	-40 °C to +85 °C

Specifications

Mechanical	
Dimensions	155 mm x 110 mm
Connector Type	MXM3.0
Software / Additional	
Software Support	■ Linux ■ VxWorks (on request) ■ Others (on request)
Additional	■ Temperature sensors, cooling controller, RTC, Management Engine ■ All I/O pins available on SEARAY™ Connectors ■ Development Kit available for immediate start; includes power supply, cables; Linux on SD card

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.

Block diagram



Order Information

Name	Code	Description	Status
miriac® MPX-LX2160A	858402	16 Arm® Cortex®-A72, 2.0 GHz, 32 GB DDR4 w ECC, 16 MB NOR Flash, 512 MB NAND Flash, 32 GB eMMC, 0 °C to 70 °C, w SEC	active
Development Kit basic for miriac® MPX-LX2160A	859702	16 Arm® Cortex®-A72, 2.0 GHz, 32 GB DDR4 w ECC, 16 MB NOR Flash, 512 MB NAND Flash, 32 GB eMMC, 0 °C to 70 °C, w SEC	active

Related Products

Name	Code	Description	Status
miriac® SBC-LX2160A	859702	Single Board Computer based on NXP® Layerscape® LX2160A Processor	active

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