![MicroSys logo] **MicroSys**
Creating Embedded Systems
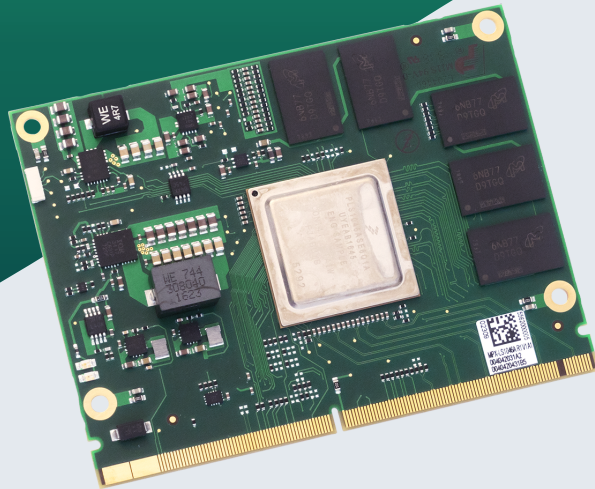
miriac® MPX-LS1046A

Low energy class server module with quad Arm®
Cortex®-A72 cores and up to two 10 GbE

Highlights

- 4 Arm® Cortex®-A72 64-bit cores at up to 1.6 GHz core frequency

- Up to 8 GB 64-bit DDR4 ECC RAM at 2100 MTps

- On-board QSPI NOR flash for a reliable boot process

- Temperature sensor

- All on board supply voltages are monitored by a separate μ-controller

- Control of on board voltages and the reset logic offer a wide spectrum of custom functionality, even

  low level safety functions

NXP Gold Partner

Product Description

New cost effective MPX-2 System on Module form factor, connecting to a standard edge connector (MXM3.0 socket).

Features

CPU	
Architecture:	Arm® Cortex®-A72
Processor:	NXP® QorIQ® LS1046A CPU: 4 ARM® Cortex®-A72 64-bit cores at up to 1.6 GHz core frequency
DRAM:	Up to 8 GB 64-bit DDR4 ECC RAM at 2100 MT/s
Memory	
Flash:	up to 2 GB SLC NAND Flash & up to 64 MB QuadSPI Flash
Flash Card:	SDHC
Boot Flash:	QSPI, SD/MMC, NAND Flash
eMMC:	8-bit
EEPROM:	Yes
Ethernet	
10GbE:	2x XFI
RGMII:	2x
SGMII:	5x 1Gbs, 3x 2.5Gbs
QSGMII:	1x 5Gbs
TSN / IEEE 1588:	Yes
High Speed IO	
SerDes lanes:	8x SerDes lanes at 10 Gbps
USB 3.0:	3x (Host / Client / OTG)
PCIe:	3x PCIe Gen3 (x4lane support)
SATA:	1x GEN3
Security / Safety	
Security:	Security Engine (SEC) SFP, CSU
Operating Condition	
Power Supply Voltage:	Single 5 to 12 V DC input supply voltage range
Typical Power Consumption:	7W
Power Management:	Yes
RTC:	Epson RX-8803LC
Temperature:	0 °C to 70 °C
Optional Extended Temperature:	-40 °C to +85 °C
Mechanical	
Dimensions:	62 mm x 82 mm

Connector Type:	MPX-2 for MXM3.0 socket

Software / Additional

Software Support:	- Linux
	- VxWorks (on request)
	- Others (on request)
Additional:	- Compatible variants available with QorIQ LS1023A, LS1043A, LS1048A, LS1088A
	- Temperature sensor
	- Dev 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.
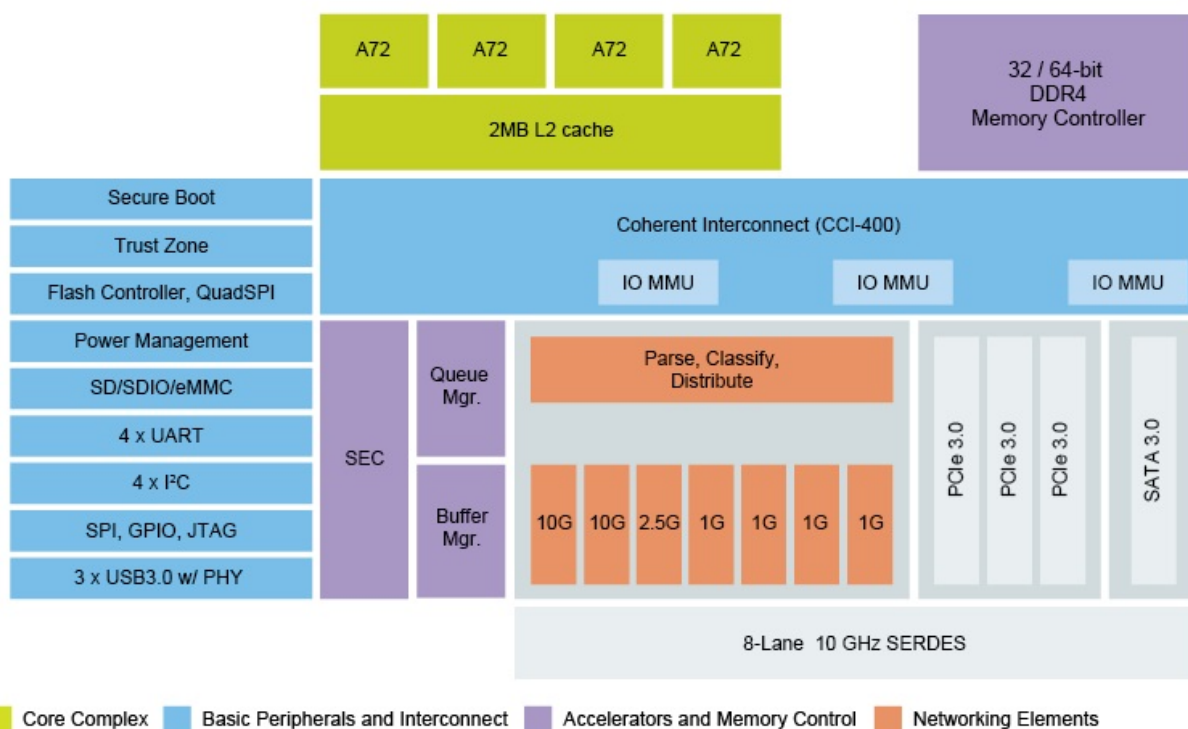
Block Diagrams
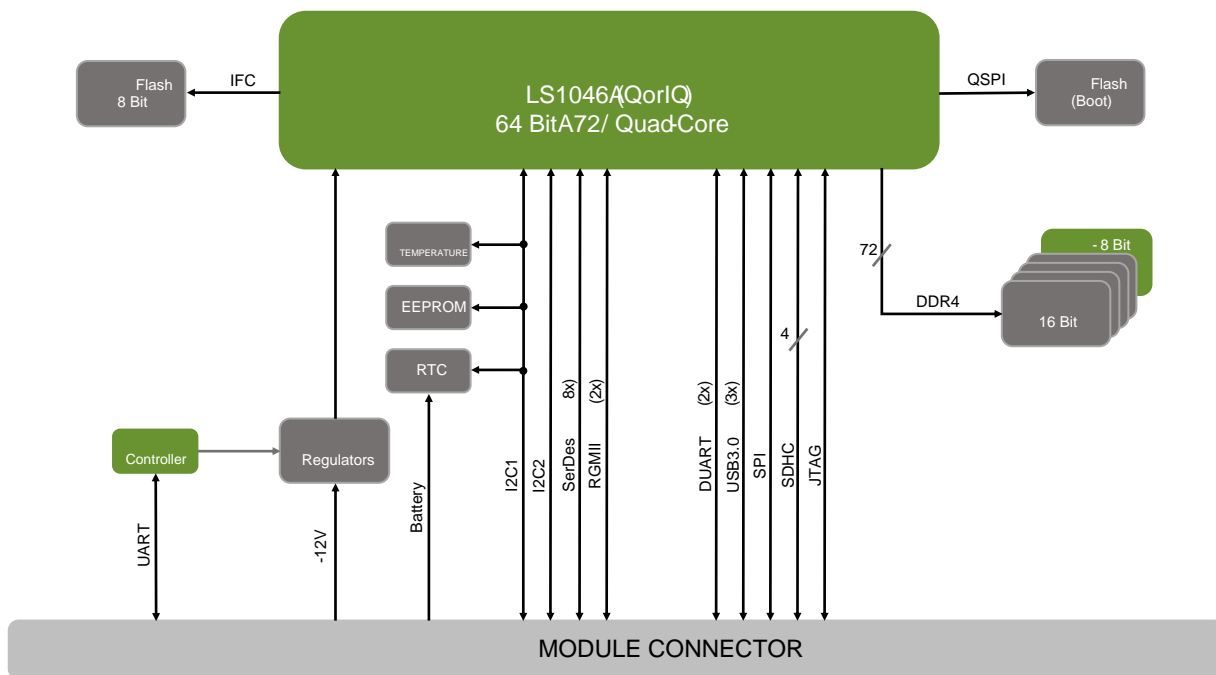
miriac® MPX-LS1046A

QorIQ LS1046A PROCESSOR BLOCK DIAGRAM

NXP® Layerscape LS1046A

Order Info

Name	Code	Description	Status
miriac® MPX-LS1046A	855610	4 Arm® Cortex®-A72, 1.6 GHz, 4 GB DDR4 w ECC, 16 MB NOR Flash, 512 MB NAND Flash, 0 °C to 70 °C, w/o SEC	active
Development Kit basic for miriac® MPX-LS1046A	855917	4 Arm® Cortex®-A72, 1.6 GHz, 4 GB DDR4 w ECC, 16 MB NOR Flash, 512 MB NAND Flash, 0 °C to 70 °C, w/o SEC	active
miriac® MPX-LS1046A	855615	4 Arm® Cortex®-A72, 1.6 GHz, 4 GB DDR4 w ECC, 16 MB NOR Flash, 512 MB NAND Flash, 0 °C to 70 °C, w/o SEC, MCU 10 Gbit/s	active
Development Kit pro for miriac® MPX-LS1046A	856411	4 Arm® Cortex®-A72, 1.6 GHz, 4 GB DDR4 w ECC, 16 MB NOR Flash, 512 MB NAND Flash, 0 °C to 70 °C, w/o SEC	active

Related Products

Name	Description	Image
miriac® SBC-LS1046A		
miriac® SBC-LS1046A-TSN		