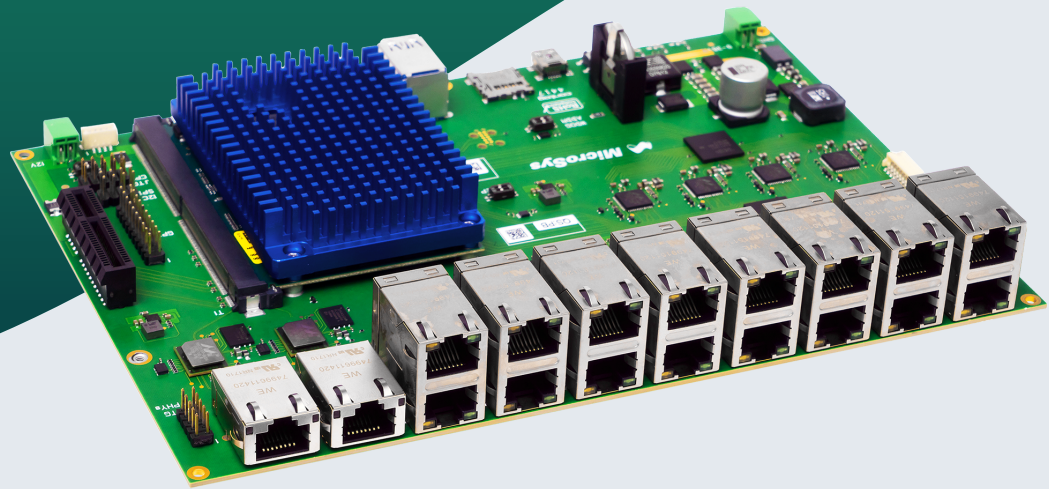


SBC Arm® Architecture

# miriac® SBC-LS1046A-TSN

Single Board Computer based on NXP® QorIQ®  
LS1046A CPU



## Highlights

- 2x 10 Gb Interfaces for High Speed Ethernet
- 8x 1 Gb TSN connectors (driven by 2 switches) for reliable real time communication over Ethernet
- NXP® QorIQ® LS1046A quad core Arm® Cortex®-A72 CPU
- All on board supply voltages are monitored by a separate  $\mu$ -controller.
- ECC Memory, Encryption (optional)





## Product Description

The miriac® SBC-LS1046A-TSN platform is part of a system family to address the increasing communication demand in industrial applications. For that the carrier offers the support of the Time Sensitive Net-working Standard (TSN) and holds a high-performance networking infrastructure. It integrates for example 2x 10 Gb and up to 6x 1 Gb Ethernet ports, 1x PCIe x4 port and 8x 1 Gb TSN connectors (driven by 2 switch-es) for reliable real time communication over Ethernet.



## 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:	Yes
Boot Flash:	QSPI, SD/MMC, NAND Flash
Ethernet	
10GbE:	2x
1GbE:	6x
TSN / IEEE 1588:	8x 1 Gbit TSN
High Speed IO	
USB 3.0:	2x
miniUSB:	1x debug
PCIe:	1x PCIe x4/x1 via edge card connector
Operating Condition	
Power Supply Voltage:	Single 9 to 36 V DC input supply voltage range
RTC:	Yes
RTC-Buffer:	CR2032 battery
Temperature:	0 °C to 70 °C
Mechanical	
Dimensions:	220 mm x 150 mm
Software / Additional	
Software Support:	<ul style="list-style-type: none"> <li>- Linux</li> <li>- Microware OS-9</li> <li>- Others on request</li> </ul>
Additional:	<ul style="list-style-type: none"> <li>- 4x RGB LED</li> <li>- Compatible variants available with QorIQ LS1023A,</li> </ul>

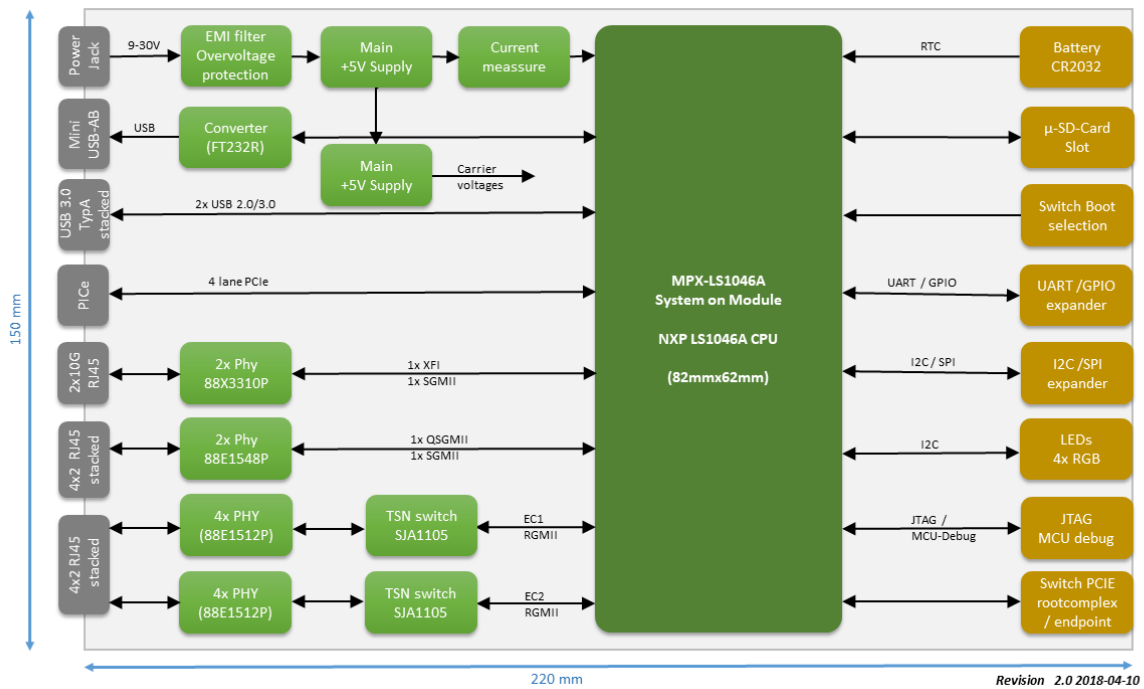
- LS1043A, LS1048A, LS1088A,
- Temperature sensor
- PCIe rootcomplex or endpoint switchable
- Overvoltage protection
- Dev Kit for immediate start up, e.g. power supply, cables (optional)

**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® SBC-LS1046A-TSN





## Order Info

Name	Code	Description	Status
miriac® SBC-LS1046A-TSN	856402	includes MPX-LS1046A SoM (order# 855610) with 1.6 GH, 4 GB DDR4 RAM (64-bit), ECC, 512 MB Flash	active
miriac® SBC-LS1046A-TSN Development Kit	856411	for MPX-LS1046A SoM, includes order # 856402, Linux BSP, accessories	active



## Related Products

Name	Description	Image
miriac® MPX-LS1046A	Low energy class server module with quad Arm® Cortex®-A72 cores and up to two 10 GbE	
miriac® SBC-LS1046A		



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