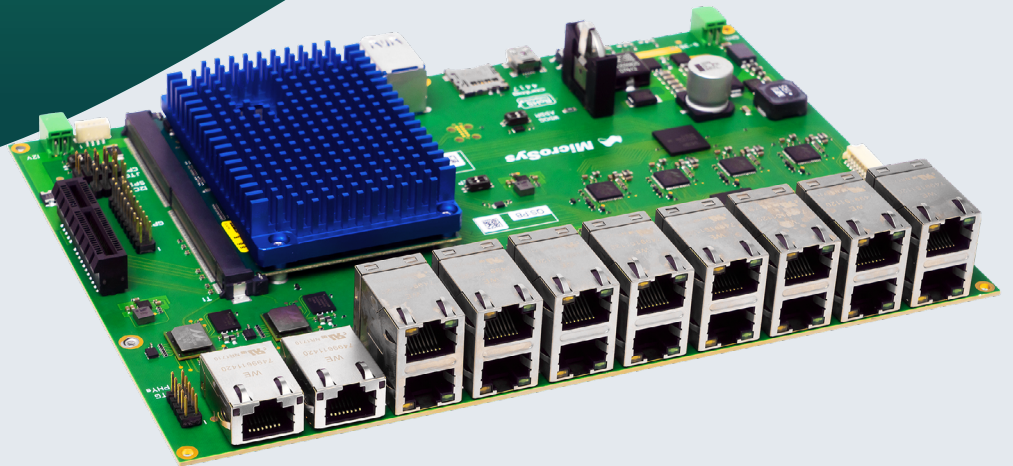


Arm® Architecture

# miriac® SBC-LS1046A-TSN

Single Board Computer based on  
NXP® QorIQ® LS1046A CPU



## Single Board Computer at a glance

- 1x 10 Gb Interfaces for High Speed Ethernet
- 6x 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 Networking Standard (TSN) and holds a high-performance networking infrastructure. It integrates for example 1x 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.



# Specifications

## 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

## IO

Flex SPI	1x
UART	3x
I²C	1x
JTAG Debug Interface	Yes

## 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

# Specifications

## Mechanical

Dimensions 220 mm x 150 mm

## Software / Additional

### Software Support

- Linux
- VxWorks (on request)
- Others (on request)

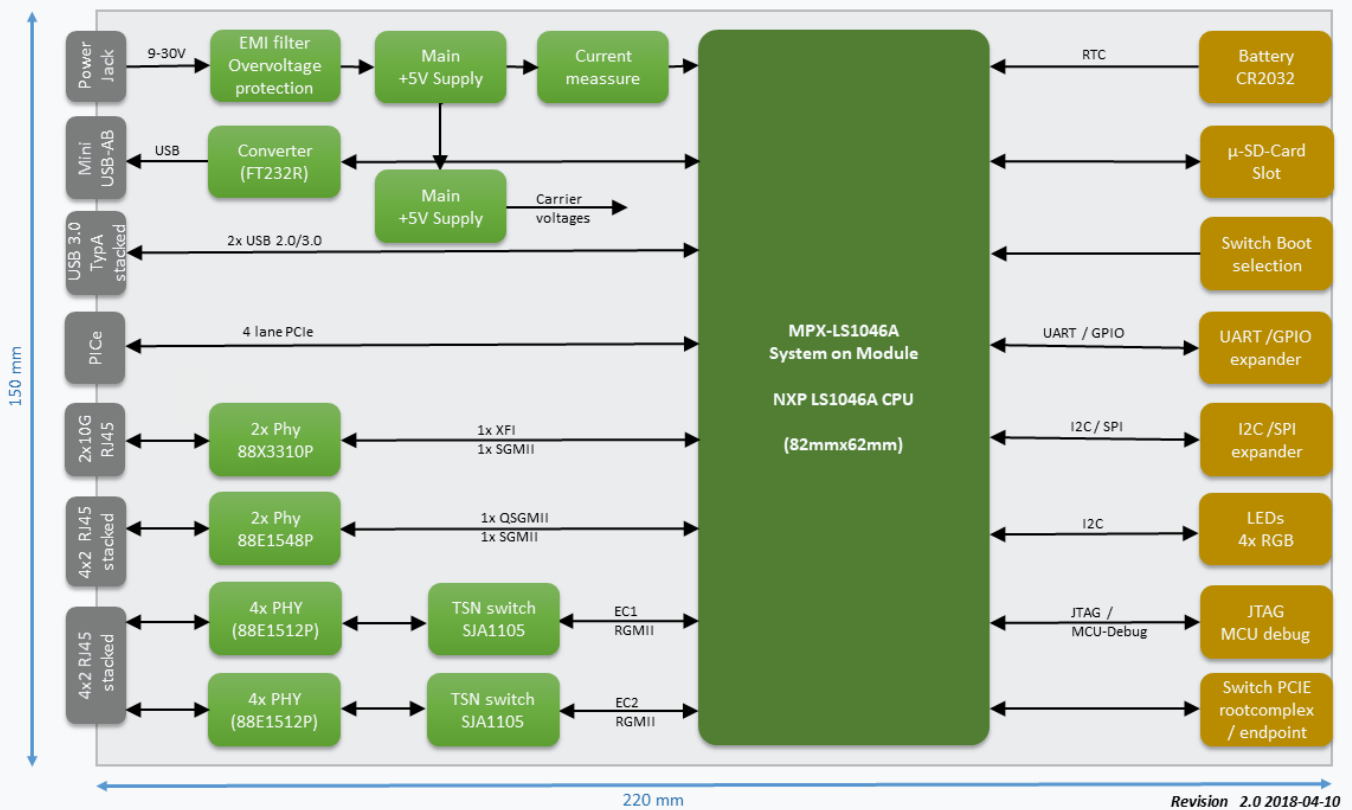
### Additional

- 4x RGB LED
- Compatible variants available with QorIQ LS1023A, 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 diagram





# Order Information

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



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