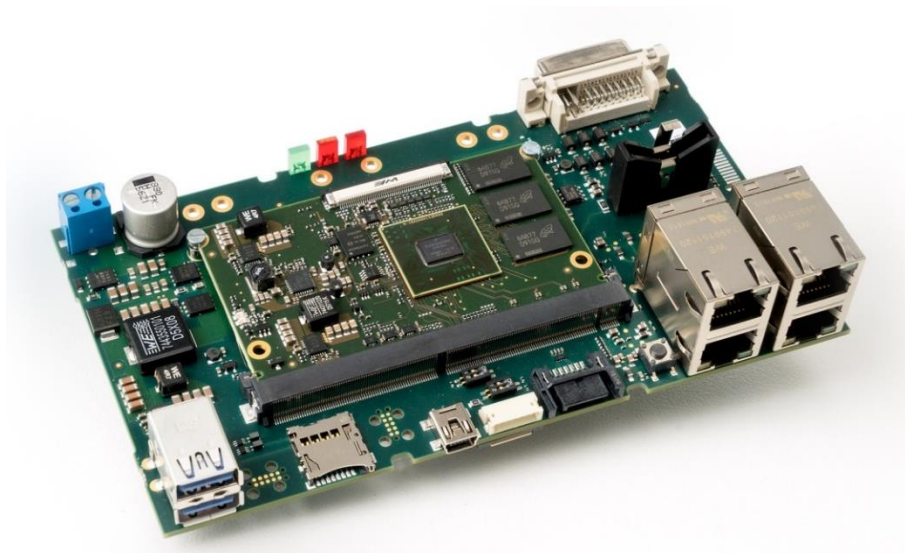# miriac™ SBC-LS1043A
Single Board Computer
Product Description

Introduction

The **miriac™** SBC-LS1043A Single Board Computer is a NXP QorIQ™ LS1043A quad core ARM Cortex A53 based complete system solution by MicroSys. NXP´s LS1043A and LS1023A (two cores) CPUs deliver greater than 10 Gbps of performance in a flexible I/O package supporting fanless designs. This SoCs are purpose-built solutions for small-form-factor networking and industrial applications with BOM optimizations for economic low layer PCB, lower cost power supply and single clock design.

MicroSys introduces a new miriac™ System on Module MPX-2 definition applied in the new SBC series. It is the successor of the proven MPX SoM specification that was introduced in 2000. It addresses the support of NXP´s QorIQ Layerscape (ARM) Architecture and Power Architecture (PowerPC) on the same module form factor. The SoMs integrate a standard MXM Edge Connector (like SMARC) to link to carrier boards. It offers up to 16 high speed channels (SMARC-2:4) and by that a flexible and high performance I/O infrastructure at attractive price levels.

The development kit offers a fast means to implement rugged designs with the aim to withstand extreme and harsh environments. Typical applications are found in automotive, industrial automation, medical, railways & transportation, construction and defense market segments. The flexible miriac MPX module carrier concept in combination with the provided board support packages of operating systems, is an excellent platform for rapid prototyping.

Those designs are quickly serial production ready. Software development environments are an integral part of the product. Middleware to address market specific requirements like field bus solutions (e.g. EtherCAT or Profinet) embedded graphics (e.g. XiBase9, Qt) or SPS environments like IEC 61131-3 conform programming can be provided on request.

Key system features

The SBC-LS1043A offers an excellent combination of protocol and interface support based on the LS1043A CPU that holds four ARM® Cortex® cores running from 1 GHz - 1.6 GHz.

The system supports up to 4 GB soldered ECC DDR4 RAM, up to 512 MB NAND Flash memory and three 1GbE ports (incl. IEEE Std 1588™ precision time protocol for network synchronization over Ethernet). Furthermore it holds one UART (TTL), two USB 3.0 interfaces, an additional USB-UART port for debug purposes. One miniPCIe / mSATA interface is available and by an optional PCIe slot (1x edge card connector) additional external hardware might be integrated. Access to external data media is provided by the mSATA and a microSD Card connector.

NXP's QorIQ technology is a perfect fit for any application requiring very high performance but low power on a small form factor system. The system is production ready, if it fits the target environment. Conduction cooling can be implemented.
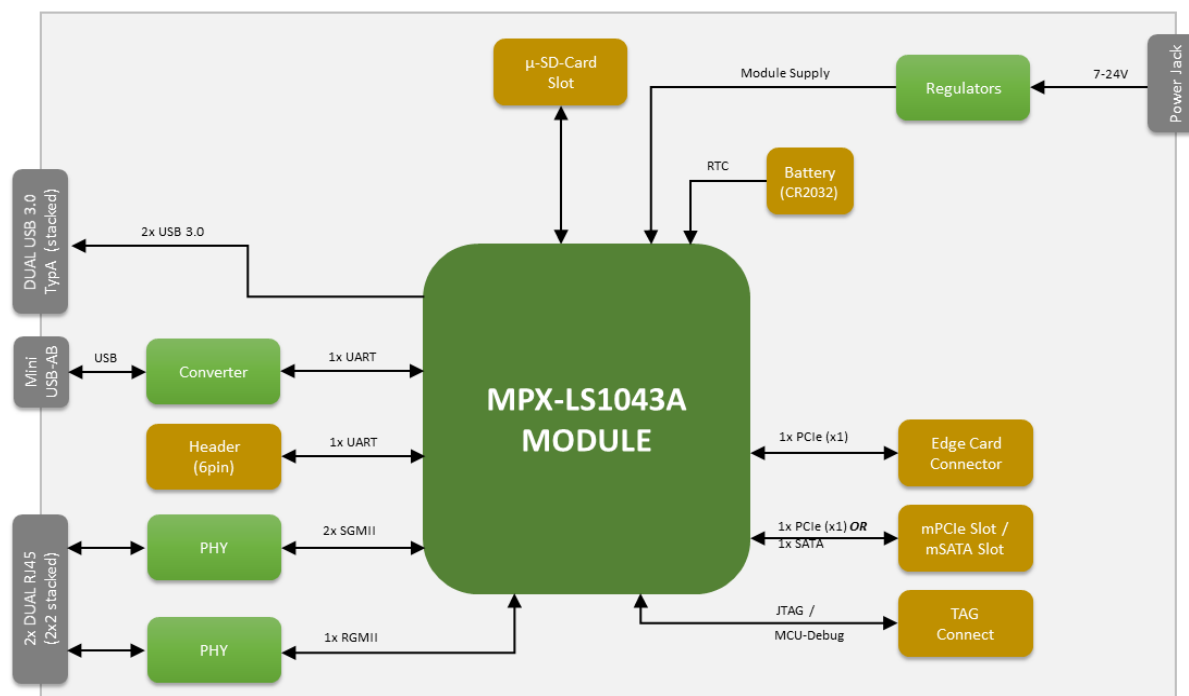
Versions for extended temperature -40°C to +85°C or rugged environments are available on request.

The SBCs are an easy means to check out system variants and guarantee a fast turnaround into series production.

Feature Summary

- NXP QorIQ LS1043A CPU: 4 ARM® Cortex® A53 64-bit cores at up to 1.6 GHz
- up to 4 GB 32 Bit soldered ECC DDR4 RAM
- up to 512 GB NAND and 16 MB SPI Flash
- three 10/100/1000 Mbps Ethernet ports
- 2 x USB 3.0
- 1 x USB to UART (debugging)
- 1 x UART (TTL)
- 1 x miniPCIe (x1) /mSATA
- optional: 1 PCIe via edge card connector
- 1 x microSD Card slot
- 1 x JTAG
- 1 x CR2032 battery (for RTC)
- Single +7 - +24 V power input
- Dev Kit for immediate start up, e.g. power supply, cables (optional)
- Board Support Packages for various operating systems (optional)

Graphic 1:   SBC-LS1043A Block Diagram

SBC-LS1043: Version 1.0.0 – 2016-05-09

Software-Support: Linux, Microware OS-9; VxWorks, MicroC/OS-II, QNX or others on request

Order #	Order text	Status
854201	miriac SBC-LS1043A Single Board Computer LS1043A@1.4GHz, 1GB DDR4 RAM, 512 MB Flash memory	Stl
854210	miriac SBC-LS1043A Development Kit, includes order # 854301, Linux BSP, accessories	BoO

Stl: 'Stock Item' – normally available ex stock

BoO: Build on Order – will be built after order received

You are interested in a different variant?

You are very welcome to contact us!

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