miriac™ MPX2041
System on Module
Product Description

Introduction

The miriac™ MPX2041 CPU Module is the first Quad Core QorIQ™ based SoM by MicroSys.

The four e500mc CPU cores in combination with the integrated hardware hypervisor and CoreNet fabric allow completely new designs for control applications. The CoreNet fabric eliminates internal data exchange bottlenecks between the CPU cores. This offers higher performance and safer operation on application level.

Multiple functions and applications can work in parallel on the same CPU. This offers very cost effective approaches in terms of price/performance or price/functionality options for embedded system projects.

Furthermore the applications remain software compatible to those supporting P10xx or P20xx QorIQ CPUs.

The QorIQ CPUs based platforms by MicroSys offer the value of extensive integration and extreme power smarts for a wide variety of applications in the

industrial, networking, telecom, medical and defense markets.

Based on 45 nm technology for low power implementation, the P2041 processor provides quad core functionality from 1,2 GHz to 1,5 GHz.
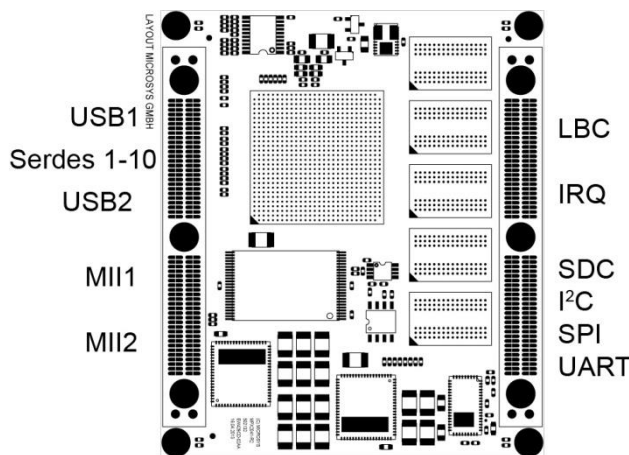
10 x @ 5 GHz SerDes lanes offer a completely new performance range for demanding I/O functions.

The physical dimensions of the MPX modules are 66 x 77 mm². The MicroSys standard includes the definition of the 2 x 208 pads to connect the SoMs to peripherals and system extensions. The innovative elastomeric connector technology offers an easy means to stack extension modules on the front and back side of the SoM. Rapid prototype designs can be done easily and turned into production systems rapidly by that.

The MPX SoM-family features a rugged design with the aim to withstand extreme and harsh environments in embedded applications
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Feature summary

- Freescale QorIQ P2041 CPU, 4 x e500mc cores up to 1,5 GHz
- 32 KB I/D Cache and 128 KB L2 Cache per core, 1 MB CoreNet platform cache with EEC
- up to 4 GByte DDR3 memory, 64bit with EEC
- 512 MByte NAND Flash and 4 MByte SPI Flash (boot option)
- 5 x 10/100/1000 Mbps Ethernet with IEEE® 1588 support
- 2 x USB 2.0, 4 x I^{2}C, 4 x UART (2 pins) or 2 x UART (4 pins), timer, SD/MMC, JTAG
- high speed interfaces supporting various multiplexed options by 10 SerDes lanes @ 5 GHz, e.g.
  - 2 x SATA
  - 3 x PCI Express
  - 2 x SRIO or
  - 4 x SGMII
- two 208 Pin Zero Force Connectors, that make all I/O and bus signals available to the carrier board
- LBC local bus
- High precision RTC
- Power: 3.3V DC single supply, 24A core voltage regulator

Software Support:

- Linux,
- VxWorks,
- Microware OS-9,
- MicroC/OS-II,
- QNX;
- others are avialable on request

Fig. 1   miriac MPX2041 SoM layout

Order Number	Description	Status
842902	miriac MPX2041 SoM, P2041@1,3GHz, 2GB DDR ECC RAM, 256MB Flash memory	StI
844310	miriac SBC2041 Development Kit, incl. order # 844301, Linux BSP, accessories	BoO

StI: '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!