

SBC Arm® Architecture

miriac® SBC-LX2160A

Single Board Computer based on NXP® Layerscape® LX2160A Processor

Highlights



- 16 Arm® Cortex®-A72 64-bit cores up to 2.2 GHz
- 24 SerDes lanes (PCIe Gen3 x8, 100 GbE/40 GbE/25 GbE/10 GbE, SATA, ...)
- 2x DDR4 controllers (up to 3200MT/s with ECC) support up to 128 GB DDR4 RAM, optional ECC
- Temperature sensors, cooling controller, RTC, management engine
- Boot select: XSPI, eMMC or external SD card



Product Description

The miriac® SBC-LX2160A Single Board Computer is a high-end platform consisting of a MicroSys designed carrier board and the miriac® MPX-LX2160A SoM based on NXP's multicore communication processor offering 16 Arm® Cortex®-A72 cores at up to 2.2 GHz. The target application is a ready-to-use evaluation system of the miriac® MPX-LX2160A as well as direct use as an industrial edge computing solution requiring high compute performance and numerous high-speed I/O.

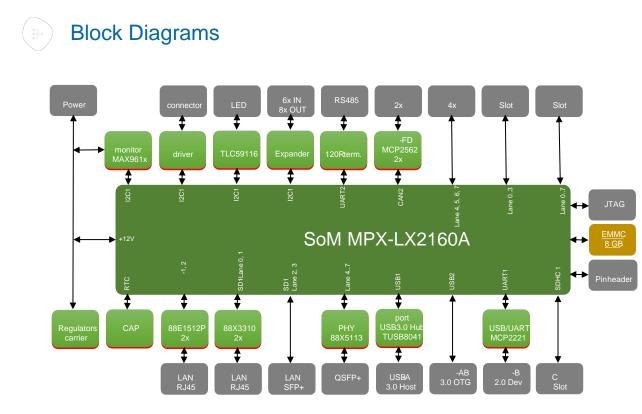
The miriac® SBC-LX2160A is optionally available in a rugged chassis for applications in harsh environments, e.g. as a control unit.

| CPUArchitecture:Arm® Cortex®-A72Processor:NXP® Layerscape® LX2160A with 16 Arm® Cortex®-A72 64-bit cores up to 2.2 GHzDRAM:- Up to 128 GB DDR4 RAM & optional ECC, up to 3200MT/sec,- Up to 128 GB DDR4 RAM & optional ECC, up to 3200MT/sec, Up to 4 ranks using a combined design: discrete & SCOIIMMMemory-Flash:Up to 2 Gb Octal SPI Flash at up to 200 MHz, double operation / golden imageFlash Card:YesBoot Flash:Boot select: XSPI, eMMC or external SD cardeMMC:8 GBEthernet-100GbE:1x QSFP+40GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2xPClee:PCle x8 & PCle x4 (Gen3)Atriational4xµUSB:2xPCle:Single +12 V DC power input ATXRTC:YesRTC-Buffer:SupercapTemperature:0 °C to 70 °C | Features | |
|--|-----------------------|---|
| Processor:NXP® Layerscape® LX2160A with 16 Arm® Cortex®-A72 64-bit cores up to 2.2 GHzDRAM:- Up to 128 GB DDR4 RAM & optional ECC, up to 3200MT/sec,all- Up to 4 ranks using a combined design: discrete & sODIMMMemory-Flash:Up to 2 Gb Octal SPI Flash at up to 200 MHz, double operation / golden imageFlash Card:YesBoot Flash:Boot select: XSPI, eMMC or external SD cardeMMC:Boot select: XSPI, eMMC or external SD cardeMMC:B GBEthernet-100GbE:1x QSFP+40GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x10GbE:2x2SGDE:2x2SGDE:2x10GbE:4xµUSB:2xPCle:PCle x8 & PCle x4 (Gen3)SATA:AxPCreating Condition-Power Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | CPU | |
| DRAM:Cortex@-A72 64-bit cores up to 2.2 GHzDRAM:- Up to 128 GB DDR4 RAM & optional ECC, up to 3200MT/sec,- Up to 4 ranks using a combined design: discrete & SODIMMMemoryFlash:- Up to 2 Gb Octal SPI Flash at up to 200 MHz, double operation / golden imageFlash Card:VesBoot Flash:Boot select: XSPI, eMMC or external SD card eMMC:eMMC:8 GBEthernet100GbE:1x QSFP+40GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x10GbE:2x10GbE:2x2SGDE:2x (SFP+)10GbE:2x2SGDE:2x (SFP+)10GbE:2x2SGDE:2x10GbE:2x2SGDE:2x10GbE:2x2SGDE:2x2SGDE:2x2SGDE:2x10GbE:2x2SGDE:2x10GbE:2x2SGDE:2x10GbE:2x2SGDE:2x10GbE:2x2SGDE:2x10GbE:2x2SGDE:2x10GbE:2x2SGDE:2x10GbE:2x2SGDE:2x2SGDE:2x2SGDE:2x2SGDE:2x2SGDE:2x2SGDE:2x2SGDE:2x2SGDE:2x2SGDE:2x2SGDE:2x2SGDE:2x </td <td>Architecture:</td> <td>Arm® Cortex®-A72</td> | Architecture: | Arm® Cortex®-A72 |
| 3200MT/sec,- Up to 4 ranks using a combined design: discrete & SODIMMMemoryFlash:Up to 2 Gb Octal SPI Flash at up to 200 MHz, double operation / golden imageFlash Card:YesBoot Flash:Boot select: XSPI, eMMC or external SD cardeMMC:8 GBEthernet1x QSFP+100GbE:1x QSFP+40GbE:2x (SFP+)10GcbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:4x10GbE:4x10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:1x QSP10GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:3x (SFP+)10GbE:3x (SFP+)10G | Processor: | • |
| SODIMMMemoryFlash:Up to 2 Gb Octal SPI Flash at up to 200 MHz, double operation / golden imageFlash Card:YesBoot Flash:Boot select: XSPI, eMMC or external SD cardeMMC:& GBEthernet1x QSFP+100GbE:1x QSFP+40GbE:2x (SFP+)10GbE:2x16BE:2x16BE:2x19GbE:2x19GbE:2x10GbE: | DRAM: | |
| Flash:Up to 2 Gb Octal SPI Flash at up to 200 MHz, double peration / golden imageFlash Card:YesBoot Flash:Boot select: XSPI, eMMC or external SD cardeMMC:& GBEthernetI100GbE:1x QSFP+40GbE:2x (SFP+)25GbE:2x (SFP+)10GbE:2x< | | |
| Plashoperation / golden imageFlash Card:YesBoot Flash:Boot select: XSPI, eMMC or external SD cardeMMC:& GBEthernet1x QSFP+100GbE:1x QSFP+25GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x10 | Memory | |
| Boot Flash:Boot select: XSPI, eMMC or external SD cardBoot Flash:Boot select: XSPI, eMMC or external SD cardeMMC:8 GBEthernet1100GbE:1x QSFP+40GbE:1x QSFP+25GbE:2x (SFP+)10GbE:2x (SFP+)10GbE:2x </td <td>Flash:</td> <td>• •</td> | Flash: | • • |
| eMMC: 8 GB Ethernet 100GbE: 1x QSFP+ 100GbE: 1x QSFP+ 25GbE: 2x (SFP+) 10GbE: 2x (SFP+) 10SB 3.0: 4x (Sen3) 10GbE: Single +12 V DC | Flash Card: | Yes |
| Ethernet 100GbE: 1x QSFP+ 40GbE: 1x QSFP+ 25GbE: 2x (SFP+) 10GbE: 2x 1GbE: 2x 1GbE: 2x Igbe: 2x VSB 3.0: 4x µUSB: 2x PCle: PCle x8 & PCle x4 (Gen3) SATA: 4x Power Supply Voltage: Single +12 V DC power input ATX RTC: Yes RTC-Buffer: Supercap | Boot Flash: | Boot select: XSPI, eMMC or external SD card |
| 100GbE:1x QSFP+40GbE:1x QSFP+25GbE:2x (SFP+)10GbE:2x10GbE:2x1GbE:2xHigh Speed IO4xµUSB 3.0:4xµUSB:2xPCle:PCle x8 & PCle x4 (Gen3)SATA:4xPower Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | eMMC: | 8 GB |
| 40GbE: 1x QSFP+ 25GbE: 2x (SFP+) 10GbE: 2x 1GbE: 2x 1GbE: 2x High Speed IO 2x VUSB 3.0: 4x µUSB: 2x PCIe: 2x AfA: 4x PCIes: 4x PCIers: 6x POwer Supply Voltage: Single +12 V DC power input ATX RTC: Yes RTC-Buffer: Supercap | Ethernet | |
| 25GbE:2x (SFP+)10GbE:2x1GbE:2xHigh Speed IO4xVSB 3.0:4xµUSB:2xPCle:PCle x8 & PCle x4 (Gen3)SATA:4xOperating Condition5ingle +12 V DC power input ATXPOwer Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | 100GbE: | 1x QSFP+ |
| 10GbE:2x1GbE:2x1GbE:2xHigh Speed IO4xUSB 3.0:4xµUSB:2xPCle:PCle x8 & PCle x4 (Gen3)SATA:4xOperating Condition5ingle +12 V DC power input ATXPower Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC:Supercap | 40GbE: | 1x QSFP+ |
| 1GbE:2xHigh Speed IO4xUSB 3.0:4xµUSB:2xPCle:PCle x8 & PCle x4 (Gen3)SATA:4xOperating Condition5ingle +12 V DC power input ATXPower Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | 25GbE: | 2x (SFP+) |
| High Speed IOUSB 3.0:4xµUSB:2xPCle:PCle x8 & PCle x4 (Gen3)SATA:4xOperating ConditionSingle +12 V DC power input ATXPOwer Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | 10GbE: | 2x |
| USB 3.0:4xµUSB:2xPCle:PCle x8 & PCle x4 (Gen3)SATA:4xOperating Condition5Power Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | 1GbE: | 2x |
| µUSB:2xPCle:PCle x8 & PCle x4 (Gen3)SATA:4xOperating Condition5ingle +12 V DC power input ATXPower Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | High Speed IO | |
| PCle:PCle x8 & PCle x4 (Gen3)SATA:4xOperating ConditionSingle +12 V DC power input ATXPower Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | USB 3.0: | 4x |
| SATA:4xOperating ConditionSingle +12 V DC power input ATXPower Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | µUSB: | 2x |
| Operating ConditionPower Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | PCIe: | PCIe x8 & PCIe x4 (Gen3) |
| Power Supply Voltage:Single +12 V DC power input ATXRTC:YesRTC-Buffer:Supercap | SATA: | 4x |
| RTC:YesRTC-Buffer:Supercap | Operating Condition | |
| RTC-Buffer: Supercap | Power Supply Voltage: | Single +12 V DC power input ATX |
| · · | RTC: | Yes |
| Temperature:0 °C to 70 °C | RTC-Buffer: | Supercap |
| | Temperature: | 0 °C to 70 °C |

| Mechanical | |
|-----------------------|--|
| Dimensions: | 244 mm x 244 mm |
| Software / Additional | |
| Software Support: | - Linux |
| | - VxWorks (on request) |
| | - Others (on request) |
| Additional: | - Board is powered by an ATX power supply with separate 12 V line, delivering 200 W minimum. |
| | - 4x RGB LED |
| | - FAN Driverc |
| | - Current Monitor |
| | Development Kit for immediate start up; includes power supply, Linux pre-installed |

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 <u>contact us</u> directly to discuss your desired configuration.



miriac® SBC-LX2160A



Order Info

| Name | Code | Description | Status |
|--|--------|--|--------|
| miriac® SBC-LX2160A Development Kit | 859702 | MPX-LX2160A with 32 GB RAM, 16 MB NOR Flash, 2.0 GHz processor, Security enabled, extended temperature, Linux BSP, accessories | active |

Related Products

| Name | Description | Image |
|---------------------|--|-------|
| miriac® MPX-LX2160A | Rugged edge server class SoM for high-end communication applications | |

CRX08







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