



Layerscape® LX2162A Communications Processor



The Layerscape LX2162A processor features 16 Arm®v8 Cortex®-A72 cores for server-level performance in a tiny 23 x 23 mm package. With twelve SerDes lanes supporting PCIe® Gen 3 and 4 x 25 Gigabit Ethernet and the low power of 16nm FinFET process technology, this processor is ideal for space-constrained high-performance boards.

OVERVIEW

The LX2162A processor squeezes the processing capability of the popular LX2160A device into a package that is nearly one quarter the size, making it suitable for small boards such as network interface cards, COM Express Type 7 modules, OCP3 mezzanine cards, and custom daughter cards. It retains LX2160A's 16 Cortex-A72 cores, 50 Gbit/s security engine and 88 Gbit/s data compression engine. It has 12 SerDes lanes at up to 25 Gbit/s, which can support four 25 Gbit Ethernet and x8 PCIe Gen3 simultaneously, among many other combinations.

FEATURES

- 16 64-bit Armv8 Cortex-A72 CPU cores, running up to 2.0 GHz
- 16 MB cache
- DDR4 72b including ECC, to 2900 MT/s, maximum capacity of 32 GB
- 2 MB packet caching buffer
- 12 SerDes lanes, operating up to 25 GHz
- Up to 12 Ethernet ports
- Supported Ethernet speeds include 1, 2.5, 10, 25, 40, and 50 Gbit/s
- 105 Gbit/s Layer 2 Ethernet switch
- Up to 12 PCIe Gen3 lanes, supporting three ports, as wide as x8
- 50 Gbit/s security accelerator
- 88 Gbit/s data compression/decompression engine
- 4 x SATA3.0
- Secure boot and Arm TrustZone® technology
- 2 x SD / eMMC, 3 x SPI, one 8-bit SPI, 2 x DUART, 8 x I²C, 1 x USB3.0, 2 x CAN (FD optional)

TARGET APPLICATIONS

The LX2162A processor targets space-constrained boards. Designers can use it on a network interface card (NIC) as the control lane to a data path ASIC or FPGA. It also can be the main processor on a 2 x 25 Gbit Ethernet NIC. For industrial applications, designers can incorporate it into standard module form factors such as COM Express, mini-ITX and OCP 3.0.

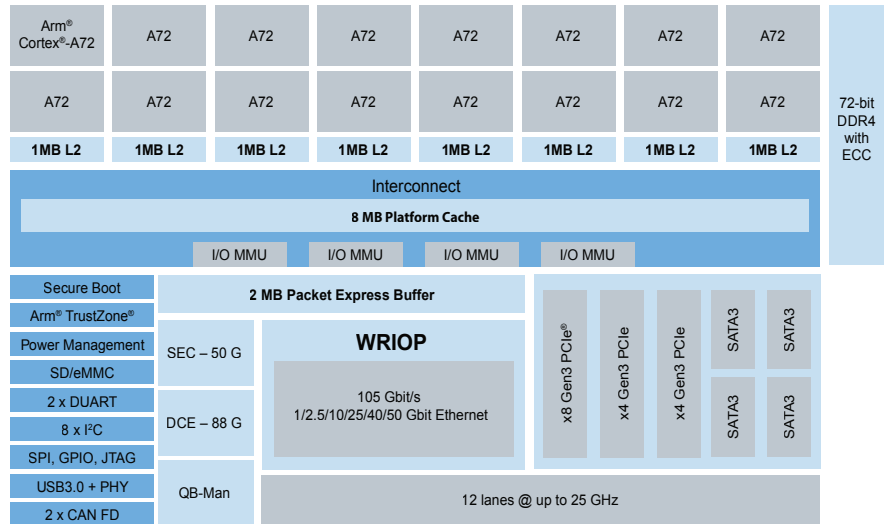


RELATED SOFTWARE

- Linux® SDK for Layerscape Processors
- CodeWarrior® Development Software for Armv8 64-bit based Layerscape Series Processors

| APPLICATION | EXAMPLES | RELEVANT FEATURES |
|----------------------------|--|---|
| Data center offload | <ul style="list-style-type: none"> • 2 x 25 Gbit/s NIC • Control plane on FPGA-based NIC | <ul style="list-style-type: none"> • 8 x PCIe® Gen 3 with SR-IOV • Low power due to 16nm FinFET process technology • Data-center friendly 25 Gbit Ethernet ports |
| Standard industrial module | <ul style="list-style-type: none"> • COM Express Type 7 • Mini-ITX • OCP 3.0 mezzanine card | <ul style="list-style-type: none"> • 23 x 23 mm package • Three PCIe Gen3 controllers • Flexible SerDes configs |

LAYERSCAPE LX2162A BLOCK DIAGRAM



LAYERSCAPE LX2162A FAMILY MEMBERS

| | LX2162A | LX2122A | LX2082A |
|-------------------------|---|---------|---------|
| Cores | 16 | 12 | 8 |
| L2 Cache | 8 MB | 6 MB | 8 MB |
| SerDes | 12 lanes at up to 25 GHz | | |
| PCIe® | 3 x Gen3, max width of x8 | | |
| DDR | DDR4, 2900 MT/s, 32 GB capacity | | |
| Platform cache + PEB | 10 MB | | |
| Ethernet | 105 Gbit/s L2 switch, supporting combinations of 12 ports of 1, 2.5, 10, 25, 40, and 50 Gbit Ethernet | | |
| Security | 50 Gbit/s | | |
| Data Compression Engine | 88 Gbit/s | | |
| Package | 23 x 23 mm, 1150 pins | | |

www.nxp.com/LX2162A

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