TELEDYNE e2v | Semiconductors
Everywhereyoulook™

LX2160A / 16-Core ARM® Cortex®-A72 for High Reliability, Mission critical, AI-enabled systems in Space, Aerospace & Military.

Advanced sixteen-core 64-bit Arm processor with up to 200 000 DMIPs computing capabilities. Featured with WRIOP capable to handle high-speed peripherals including 100 GbE, multiple PCIe Gen3.0, hardware L2 switching, DPAA2 with 100 Gbps decompression/compression, and 50 Gbps Encryption engine. This is also complemented by a dual CAN interface, as well as UART, SPI, and I^2C. It targets a wide range of Edge computing applications, high-end and high-speed communications in one device in Space, Aerospace & Military systems.

TARGET APPLICATIONS

LX2160A processor is perfectly suited for a range of embedded applications that require high speed multicore CPU, packet processing performance, high-speed interfaces such as 100 Gb Ethernet, multiple PCIe Gen3.0 and SATA controllers.

In Space, LX2160 Space Radiation Tolerant specific version offered by Teledyne e2v is serving Edge Computing systems, Single Board Computers and other compute intensive systems on equipment and payloads, enabling for instance AI on board in an optimized power envelope.

In Aerospace & Military systems, LX2160 is equipping systems requiring heavy computing, integration, and power efficiency.

OVERVIEW

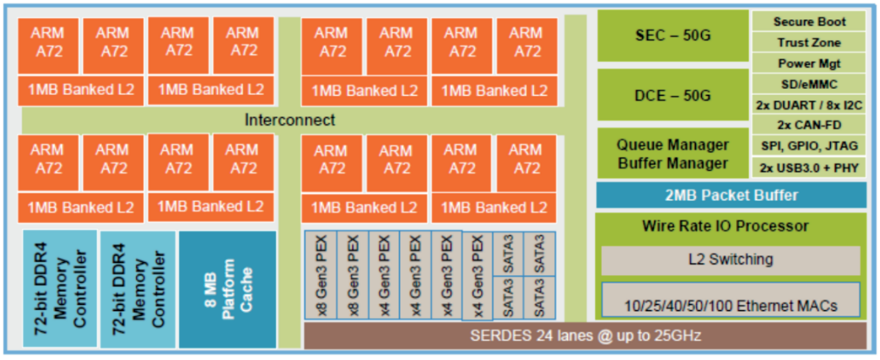
LX2160A multicore processor is the highest-performance member of the Layerscape family, and combines sixteen Arm® Cortex®-A72 cores with datapath acceleration optimized for L2/3 packet processing, together with security offload, robust traffic management and quality of service, on low power FinFET process technology.

The high level of integration delivers significant performance benefits such as 100 GbE, hardware L2 switching, DPAA2 with 100 Gbps decompression/compression and 50 Gbps Encryption engine and multiple PCIe Gen3.0 and SATA controllers.

For Edge Computing, this processor offers outstanding computing performance with a powerful packet offload and Ethernet controllers.

This single device offers high-end and high-speed communications, with low-speed peripherals able to interface with various external devices, and the computing power to process and act upon all received information.

LX2160 PROCESSOR BLOCK DIAGRAM AND KEY FEATURES



Process & Package

- 16FFC
- ~25W Thermal Max @ 105C – 2.0GHz
- 40x40mm, Lidded FCBGA,

Space Specific

- NASA & ECSS Space Qualification
- -55/125C Temperature Range
- Radiation Testing & Reports

Performance

- ARM A72 x 16 @ 2.2 GHz
- ~201K DMIPS
- SpecInt2k6 –17.6, Rate -157
- Neon SIMD in all CPUs
- 2x72b (including ECC) DDR4 up to 3.2GT/s
- 51GB/s memory BW
- High Speed IO
- Multiple PCIe Gen3 controllers
- Multiple Ethernet MACs (up to

Security

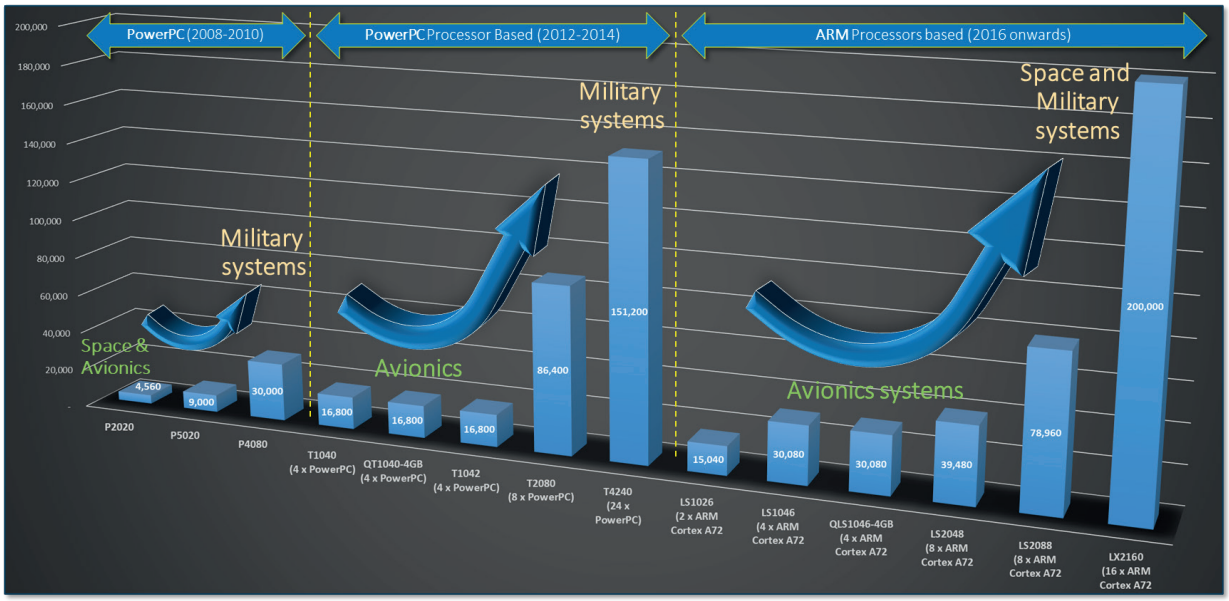
- 50Gbps Crypto Acceleration
- MACSEC, IPsec, SSL
- Trust Architecture
- Secure Boot & Debug
- Secure Storage
- Tamper Detection
- HW Enforced Partitioning
- ARM Trust Zone

Functional Safety

- Target QM(B)
- ECC protected memories
- Fault localization, containment and recovery
- Soft lockstep with determinism
- Excellent support for virtualization, containerization

Teledyne e2v is committed to propose to its Hi-Reliability Space, Aerospace & Military customers the state of the art processors from NXP, and LX2160 is perfectly suited to serve all kinds of demanding applications in these markets.

The following picture is highlighting the DMIPS performances from 3 generations of processors (QorIQ® PowerPC P-Series, T-Series & Layerscape®) versus the type of customer projects they are or have been embedded into.



For more information, please contact hotline-std@teledyne.com