QorIQ® LX2160A Reference Design Board (RDB)

The QorIQ LX2160A reference design board is a 1U form-factor tool for evaluation and design of value-added networking applications such as 5G packet processing, network-function virtualization (NFV) solutions, edge computing, white box switching, industrial applications, and storage controllers.

OVERVIEW

The highest performance member of the Layerscape family, the LX2160A excels at running Linux-based networking applications. With the low power of FinFET process technology, 16 high-performance Arm® Cortex®-A72 cores, large caches, accelerators to 100Gbps, 100 Gigabit Ethernet, and PCIe Gen4, the Layerscape LX2160A SoC enables machine learning, cloud-like computing, and NFV at the network edge for greater application responsiveness.
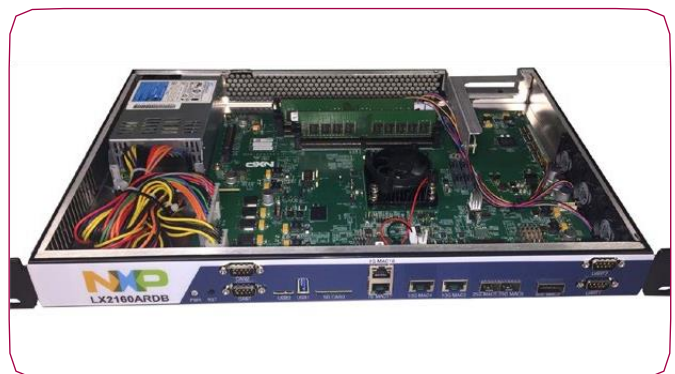
The QorIQ LX2160A RDB provides a comprehensive platform that enables design and evaluation of the LX2160A and its most popular features. It can also be used to evaluate the other two LX2 family members (12-core LX2120A; and 8-core LX2080A). The LX2160A reference design is a 1U
form factor and will conform to all requirements for sale worldwide, including certifications for FCC Part 15 Class A.

The QorIQ LX2160A RDB comes pre-loaded with NXP's board support package (BSP) based on a standard Linux® kernel. Some features enabled in the BSP include:

` Support for all IO, including 1GE, 10GE, 25GE, 40GE, 50GE, and 100GE; PCIe as both Endpoint and Root complex

` Yocto Project/Poky distributions

` DPDK APIs and example applications

` User space drivers for networking accelerator blocks and examples applications using them

` Virtualization: KVM, Dockers, virtio-net

` Uboot and UEFI bootloaders

` Standard GNU tool chain

` Available CodeWarrior tool chain

LX2160A-RDB

HARDWARE FEATURES

` Processor

- LX2160A, 16x Arm Cortex-A72 CPU, up to 2.2GHz
- DIP switch setting can configure device for 8- and 12-core operation

` Memory

- Two DDR4 UDIMM to 3200MT/s
- 32GB total capacity (16GB per UDIMM)
- Flash: 128MB NOR, 128GB eMMC

` Ethernet

- One 40G Etherent QSFP+
- Two 25G Ethernet SFP+
- Two RJ45 10G Ethernet
- Two RJ45 1G Ethernet

` PCIe

- One PCIe Gen4 x8 slot
- One PCIe Gen4 x4 slot

` Other IO

- Four SATA3.0 connectors
- One USB3.0 Type A connector
- One USB3.0 micro AB connector
- Monitoring of voltage, current, temperature, and power on I²C bus

ORDERING INFORMATION

Two optional kits provide cabling and transceivers for 10GE and 40GE (LX2RDBKIT1-10-40) and 25GE (LX2RDBKIT2-25G).

ORDERABLE PART NUMBER	
LX2160A-RDB	

COMPLETE ENABLEMENT, RICH ECOSYSTEM

NXP's strong legacy of networking expertise and Arm's rapidly growing development base provides a rich ecosystem for our customers. Our extensive third-party ecosystem, the largest and most established in the communications market, supports all QorIQ LS series devices. This environment also supports the vibrant, growing Arm ecosystem, including the Linaro™ not-for-profit engineering organization.

In conjunction with our expertise and worldwide support infrastructure, this broad ecosystem helps customers accelerate their migration from non-NXP solutions and legacy NXP devices, preserving investment costs and reduce time-to-market.

NXP professional services can further improve customer time to market with options ranging from guaranteed response time support to full turnkey solutions.

LAYERSCAPE LX2160A-RDB BLOCK DIAGRAM