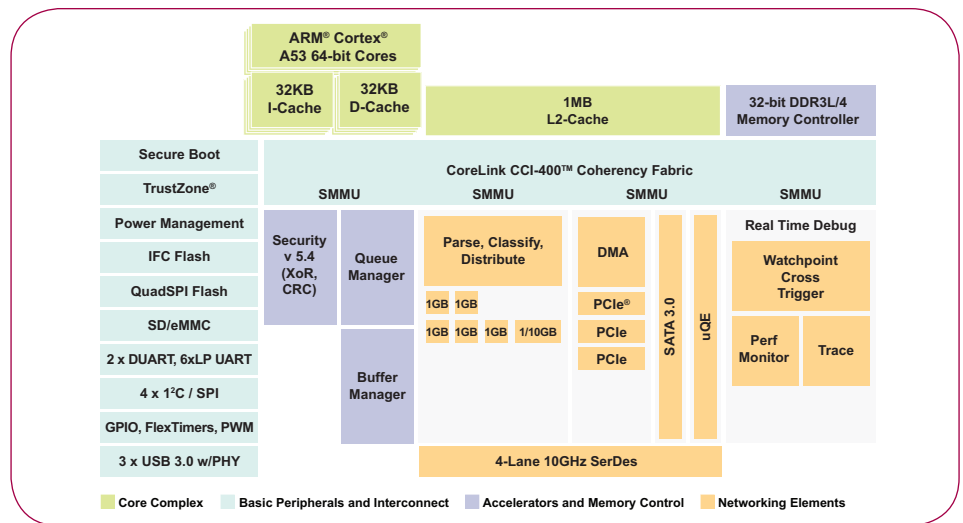


SYSTEM INTERFACES AND NETWORKING

The QorIQ LS1043A and LS1023A communications processors includes a four-lane, 10 GHz multi-protocol SerDes providing support for high-speed interfaces, including up to six Gigabit Ethernet ports with IEEE® 1588 support, three DMA controlled PCI Express generation 2.0 ports and a single SATA 3.0 port. The Ethernet ports are integrated within the Frame Manager, which provides hardware packet parsing, classification, and policing, and even packet processing capabilities such as IP reassembly. Working with the integrated security engine (SEC 5.4), the Frame Manager can perform in-line IPsec, freeing up the general purpose processors for higher level, value added tasks.

The LS1043A processor also features triple USB 3.0 controllers with integrated PHY for a variety of storage, WAN and configuration options. Additional interfaces include QuadSPI, IFC and support for SD/MMC. In addition, Serial I/O includes quad I²C/SPI interfaces.

QorIQ LS1043 PROCESSOR BLOCK DIAGRAM



COMPLETE ENABLEMENT, RICH ECOSYSTEM

Our legacy of strong networking expertise and ARM’s rapidly growing development base provides a rich ecosystem that delivers the best of both worlds. Our extensive third party ecosystem, the largest and most established in the communications market, supports all QorIQ LS series devices. In addition, the vibrant, growing ARM ecosystem is supported, including

Linaro Linux® and the OpenDataPlane (ODP) project, which is creating an open standard API for accelerated multicore network-centric processing.

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

QorIQ LS1043A PROCESSOR FEATURES

| Features | Benefits |
|--|---|
| <ul style="list-style-type: none"> Up to Four ARM Cortex®-A53 Cores | <ul style="list-style-type: none"> Best in class performance to power efficiency, engineered to deliver an estimated 21,000 CoreMarks® Total system power as low as 5 W for fan-less platform design |
| <ul style="list-style-type: none"> Data Path Acceleration Architecture | <ul style="list-style-type: none"> Efficient packet classification and distribution; hardware work scheduling, shaping, and buffer management Offloading the general purpose processors to concentrate their processing cycles on value added operations |
| <ul style="list-style-type: none"> Integrated Security Engine (SEC 5.4) | <ul style="list-style-type: none"> High-speed security protocol processing, including IPsec, SSL, DTLS, and IKE The SEC also supports high speed XORing for RAID 5 acceleration |
| <ul style="list-style-type: none"> Rich Connectivity and Peripheral Features, Including PCI Express® Gen 2, USB 3.0, SATA 3, IFC, QuadSPI | <ul style="list-style-type: none"> High versatility that enables support for 802.11ac modules and high bandwidth connectivity for ASICs, 4G/LTE, SATA and low-cost NAND/NOR Flash. Multiple USB 3.0 for redundant WAN fail over, storage and configuration. Advanced XFI, Quad SGMII (supported by F104 QSGMII PHY) and 2.5 G Overclocked SGMII support for maximum Ethernet flexibility |
| <ul style="list-style-type: none"> QUICC Engine Technology | <ul style="list-style-type: none"> Proven BOM cost saving support required for legacy networking, industrial, building and factory protocols such as PROFIBUS, HDLC and TDM |
| <ul style="list-style-type: none"> Support for Hardware-Based Virtualization | <ul style="list-style-type: none"> Enables partitioning of physical and virtual resources on QorIQ LS1043A multicore parts for increased system flexibility |
| <ul style="list-style-type: none"> DDR3L/4 | <ul style="list-style-type: none"> DDR3L/4 First in its class to offer support for DDR4 memory, ensuring continued performance efficiency |

www.nxp.com/QorIQ

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