



QorIQ LS1 Processor Family



QorIQ LS1024A Reference Design Board

Compact form-factor tool that enables evaluation for low-end networking applications

Overview

The QorIQ LS1024A communications processor addresses a wide variety of applications such as high-end VoIP, video-enabled home gateways, small-to-mid-sized business (SMB), high performance security appliances, Ethernet powered 802.11n enterprise access points and consumer networked attached storage products. The QorIQ LS1024A reference design board (LS1024ARDB) is a compact form-factor tool that enables evaluation of the LS1024A

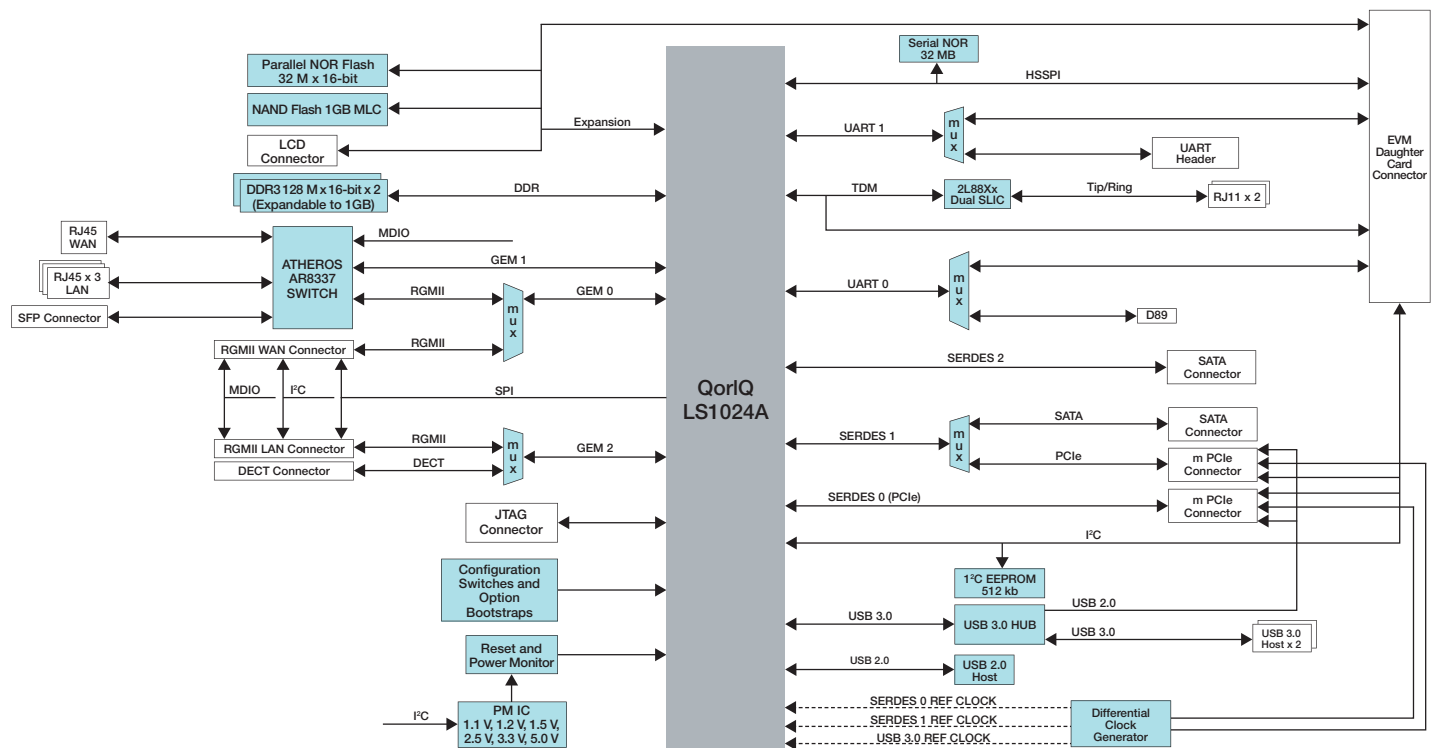
solution for these and other low-end networking applications. The LS1024ARDB also features an expansion connector suitable for adding additional components such as an LCD panel.

The QorIQ LS1024ARDB can help shorten your time to market by exercising most capabilities of the device and can serve as a reference for hardware development. It can also be used as a debug tool to check

behaviors on the board compared to behaviors seen on customer boards. The board can be used for software development and performance evaluation prior to the customer's own board being ready.

The LS1024ARDB comes in a compact 160 mm x 220 mm form factor which allows mounting in an enclosure. A PCI Express Wi-Fi® card is included to facilitate evaluation and development of Wi-Fi connectivity solutions.

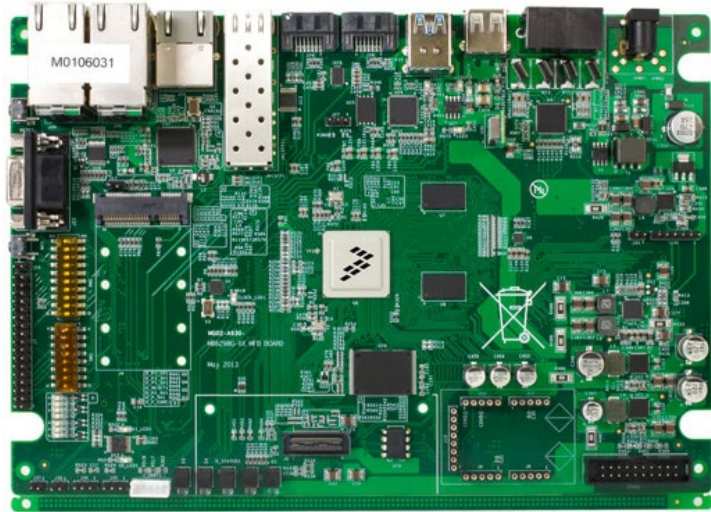
QorIQ LS1024ARDB System Block Diagram



The LS1024ARDB is preloaded with a binary image of Freescale's OpenWRT-based broadband home router application solution kit (ASK). This comprehensive SDK includes networking features such as PPP over Ethernet, TCP-IP, OpenSSL, IPsec, WiFi Access and Fast Packet forwarding, among others. The ASK also comes with comprehensive VoIP firmware including narrow- and wide-band voice codecs, echo cancellation and many other features. Customers may also purchase full source-level access to the ASK and professional software support service plans. There is also a network attached storage ASK, optimized for storage applications.

The QorIQ LS1024A communications processor is based on dual ARM® Cortex®-A9 cores, with FPU and NEON SIMD, offering speeds of 650–1200 MHz. It features a programmable packet forwarding engine (PPFE) and cryptographic engine (CE) which deliver 2 Gbps IP forwarding and 2 Gbps of IPsec with virtually no CPU load. The processor's I/O includes two PCI Express® controllers, three Gigabit Ethernet interfaces, two SATA 2.0 interfaces, one USB3.0 and one USB2.0 interface.

QorIQ LS1024A Development Board



Features

- Memory
 - Default 256 MB (2x128Mx16) Also support 512 MB (2X256MX16) DDR3
 - 64 MB (32Mx16) NOR Flash
 - 2 GB NAND Flash
 - 64 MB SPI NOR Flash
 - 64 KB I2C EEPROM
- Ethernet
 - 4x GbE LAN connectors
 - 1x GbE WAN connector
 - 1x SFP+ connector
- USB
 - 4 PORT SMSC USB 3.0 HUB
- 2x USB Type 3.0A Connectors
- 2 Mini PCI Express Connectors
- 1 Port USB 2.0 Controller
- 1 UAB Type 2.0A Connector
- SerDes
 - 1x PCI Express
 - 2x Mini PCI Express Connectors
 - 2x SATA Connectors
- DECT
 - One Adaptor Socket on board
- Voice
 - 2 FXS Ports (ZL88601 Dual Wide Band SLIC)
- UART
 - UART0 is connected to on board DB9 connector
 - UART1 is brought to 5 pin connector
- Expansion 128 Pin High Density Connector
 - Expansion Bus
 - SPI Bus
 - TDM Bus
 - I²C Bus
 - UART Busses
 - GPIO
 - System and External Reset
 - Power
- LCD Connector
 - Expansion Bus
 - SPI Bus
- PMIC for Voltage Control

For more information visit freescale.com/QorIQ

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Document Number: LS1024ARDBFS Rev 0