QorIQ Qonverge Platform

QorIQ Qonverge BSC9132 for Picocell Base Station Solutions

A new dimension in wireless processing

Overview

The BSC9132 is a highly integrated device that targets evolving microcell, picocell and enterprise femto base station applications. The BSC9132 device combines two e500 cores, built on Power Architecture® technology, and two StarCore SC3850 cores with MAPLE-B2P baseband acceleration processing elements to address the need for a high-performance, cost-effective, integrated solution that handles all required processing layers without the need for an external device (except for an RF transceiver).

With primary target air interfaces for LTE-FDD/TDD, WCDMA (HSPA+) and WiMAX, the BSC9132 programmable device supports the performance and cost requirements of up to 20 MHz single sector LTE-FDD/TDD by handling 150 Mb/s downlink and 75 Mb/s uplink rates, and 5 MHz HSPA+ by handling 42 Mb/s downlink and 23 Mb/s uplink. The BSC9132 supports multimode operation that enables it to process LTE-FDD/TDD and WCDMA (HSPA+) users simultaneously.

Target Applications

Picocell: Small cell wireless base stations supporting the following standards:
- LTE-FDD/TDD
- WCDMA (HSPA+)
- TD-SCDMA
- WiMAX

QorIQ Qonverge BSC9132 Processor

![Diagram of the BSC9132 Processor](image-url)
### QorIQ Qonverge Features

The BSC9132 is a highly integrated device combining Power, StarCore and MAPLE architectures. The device includes the following features:

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<th>Core</th>
<th>• Power Architecture technology including two e500 processors with 512 KB shared L2 cache</th>
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<td>DSP</td>
<td>• Two StarCore SC3850 DSP subsystems, each with a 512 KB private L2 cache</td>
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<td>Baseband Acceleration</td>
<td>• The MAPLE-B2P multi-accelerator platform engine supports functions that enable LTE-FDD/TDD, WiMAX and WCDMA (HSPA+) wireless standards</td>
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| Memory                            | • 32 KB of shared M3 memory
• Two DDR3/3L memory interfaces with 32-bit data width (40 bits including ECC), up to 1333 MHz data rate
• Integrated flash memory controller |
| Security                          | • Dedicated security engine featuring trusted boot |
| RF Interface                      | • Three full-duplex and one half-duplex JESD207 RF interfaces
• Two CPRI interfaces for remote radio head integration |
| Connectivity                      | • Two DMA controllers. One with four bi-directional channels and the other with 16 bi-directional channels—one controller serves both the Power Architecture cores and DSP domains with the other controller used mainly for DSP operations.
• Two triple-speed Gigabit Ethernet controllers featuring network acceleration, including IEEE® 1588 v2 hardware support for two SGMII ports
• USB 2.0 host and device controller
• Two DUART, two SPI and two I²C controllers
• 96 GPIO, TDM with 512 channels
• USIM interface
• Enhanced Secure Digital Host Controller (eSDHC) interface to MMC, SD and SDIO cards |
| Interfaces                        | • Four-lane SerDes PHY that multiplexes the following:
  • Two CPRI controller lanes
  • Two SGMII interfaces
  • Two PCIe lanes |

Freescale will provide comprehensive and commercial L1, L2, L3 and transport software, integrated and tested on BSC9132 platforms:

• LTE-FDD/TDD and WCDMA (HSPA+)
  VortiQa L1 baseband software licensed by Freescale
• LTE PHY Conformance (LPC) and Test Toolkit software licensed by Freescale
• L2/L3 software for LTE-FDD/TDD and WCDMA (HSPA+) via partners
• Development tools and operating system software through Freescale and its ecosystem partners

For more information about Freescale’s QorIQ Qonverge BSC913x family, visit [freescale.com/QorIQQonverge](freescale.com/QorIQQonverge)

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