



QorIQ Qonverge Platform

QorIQ Qonverge BSC9132 Development System

Single-chip solution for picocell base stations, VoIP gateways, video processing and industrial automation



Overview

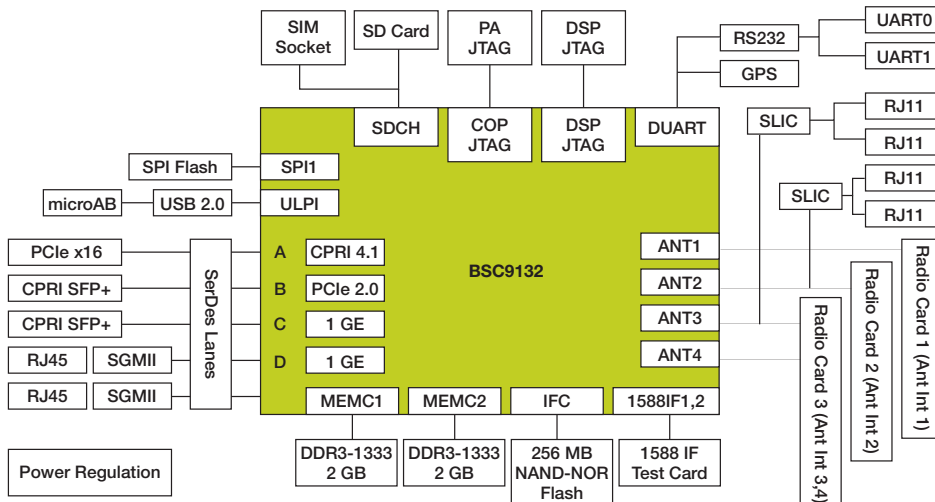
The QorIQ Qonverge BSC9132 development system (BSC9132QDS) enables the development of applications in the wireless base station, military and aerospace, enterprise and industrial markets. The development system is a highly flexible board that provides support for all of the features offered by the QorIQ Qonverge BSC9132 System on Chip (SoC), including a full-size PCI Express® connector, 2 serial RS232 connectors, 3 JESD207 interfaces, 2 CPRI interfaces, 4 TDM ports, GPS receiver, USB port and 2 Gigabit Ethernet interfaces with support for 1588v2. The BSC9132QDS allows for verification of the QorIQ Qonverge BSC9132 processor operation and enables end-to-end system performance verification.

Within the wireless base station market, the BSC9132QDS supports the development and testing of the Layer 1, Layer 2 and Layer 3 protocol stacks, as well as higher layer wireless software applications. The highly integrated BSC9132 SoC targets the evolving small cell base station market and combines two e500 Power Architecture® CPUs and two StarCore SC3850 DSPs with MAPLE-B2P baseband acceleration processing elements. Together, they address the need for a high-performance, cost-effective, integrated solutions that handle all required processing layers without the need for additional external processing devices.

Applications

- Multimode LTE/WCDMA picocell
 - LTE-FDD/TDD
 - WCDMA
 - WiMAX
- Wireless backhaul systems
- VoIP gateway/PBX platform with TDM interfaces
- Radio communications systems
- Software-defined radio
- Test equipment: network simulators for 3G and 4G technologies
- Video processing
- Industrial automation

QorIQ Qonverge BSC9132 QDS Block Diagram



The QorIQ Qonverge BSC9132 SoC provides the following features:

- Two high-performance 32-bit e500 cores built on Power Architecture technology
 - 36-bit physical addressing
 - Double-precision floating-point support
 - 32 KB L1 instruction cache and 32 KB L1 data cache per core
 - Enhanced hardware and software debug support
 - 1 GHz to 1.2 GHz clock frequency
 - 512 KB shared L2 cache with ECC; also configurable as SRAM and stashing memory
- Two SC3850 StarCore cores
 - 32 KB 8-way L1 instruction/data cache
 - 512 KB 8-way L2 unified instruction/data cache
 - Memory management unit
 - Enhanced programmable interrupt controller
 - Debug and profiling unit
 - Two 32-bit quad timers
- Multi Accelerator Platform Engine (MAPLE) for picocell base stations
 - Supports variable sizes in Fourier transforms, convolution, filtering, turbo, Viterbi, chiprate and MIMO
 - Consists of accelerators for UMTS chip rate processing, LTE UL/DL channel processing, matrix inversion operations and CRC algorithms

Specifications

Processor	Two e500 Power Architecture processors with 512 KB shared L2 cache
DSP	Two StarCore SC3850 DSPs, each with a 512 KB private L2 cache
DC power	100–240 V AC input to standard ATX power supply
Ethernet WAN	RJ45 jack
Memory	Two banks of 2 GB DDR3 1333 MHz
SIM card	3 V and 18 V (Class B and Class C)
PCI Express®	PCIe x16 socket
RF card connections	Three connectors for FDD or TDD RF Cards
GPS antenna	SMA connector
RF card antenna connections	Two SMA connectors per RF card
CPRI interfaces	Two SFP+ connectors
USB	Micro AB socket
Ethernet LAN	RJ45 jack
TDM	Four RJ11 jacks or two 6-pin test headers
Operating temperature	0 °C to +40 °C, Humidity 5% to 95% RH
Storage temperature	–20 °C to +70 °C (–4 °F to +158 °F)

- Two DDR3/DDR3L SDRAM memory controllers
 - 32-bit ECC support
- Rich set of peripherals perfectly suited for picocell applications
- PCIe slot
- Rich ecosystem with partners in OS, modern protocol stack and RF transceivers
- VortiQa LTE and WCDMA L1 software available

Features

- QorIQ Qonverge BSC9132 integrated SoC with Power Architecture and StarCore DSP
- End-to-end development system for LTE-FDD/TDD, WCDMA (HSPA+) and WiMAX
- Plugable RF cards for multiband support
- Simultaneous dual mode operation, such as LTE-FDD + WCDMA (HSPA+)
- FCC certified
- TDM interfaces



For more information about the QorIQ Qonverge platform, visit freescale.com/QorIQQonverge

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Document Number: BSC9132QDSFS REV 2