NXP

BUILT ON
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Power
™

QorIQ Qonverge Platform

QorIQ Qonverge BSC9131 for Femtocell Base Station Solutions

A new dimension in wireless processing

Target Applications

Femtocell: Home or small office cellular base stations supporting the following standards:
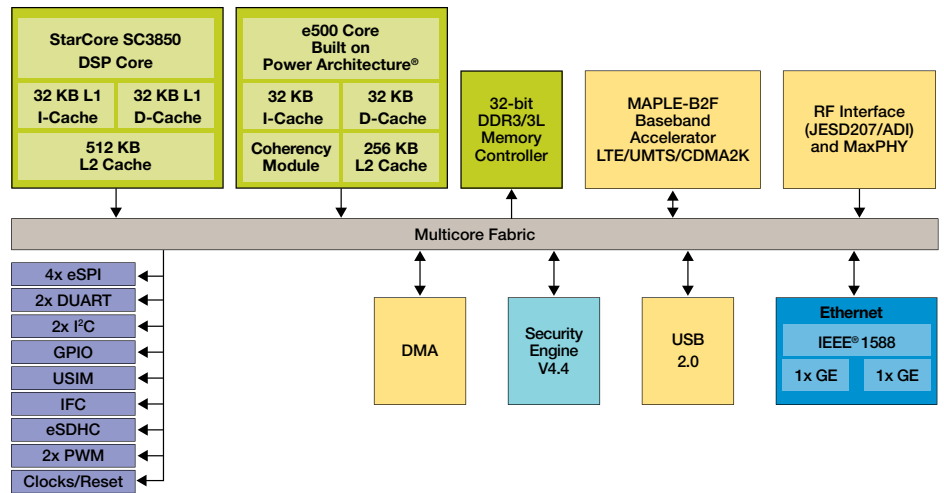
- LTE-FDD/TDD
- WCDMA (HSPA+)
- CDMA2K
- TD-SCDMA

Overview

The QorIQ Qonverge BSC9131 processor is a highly integrated device that targets evolving femto and enterprise femto applications. The BSC9131 combines Power Architecture® e500 and StarCore SC3850 core technologies with MAPLE-B2F baseband acceleration processing, addressing the need for a high-performance,

cost-effective, integrated solution that handles all the digital baseband processing required for femtocells.

The programmable BSC9131 device, targeted at LTE/FDD/TDD, WCDMA (HSPA+) and CDMA2K, supports multiple air interface standards and can support two concurrent standards.

QorIQ Qonverge BSC9131 Processor

StarCore SC3850 DSP Core	e500 Core Built on Power Architecture®	32-bit DDR3/3L Memory Controller	MAPLE-B2F Baseband Accelerator LTE/UMTS/CDMA2K	RF Interface (JESD207/ADI) and MaxPHY
32 KB L1 I-Cache / 32 KB L1 D-Cache	32 KB I-Cache / 32 KB D-Cache			
512 KB L2 Cache	Coherency Module / 256 KB L2 Cache			

Multicore Fabric

4x eSPI
2x DUART
2x I²C
GPIO
USIM
IFC
eSDHC
2x PWM
Clocks/Reset

DMA	Security Engine V4.4	USB 2.0	Ethernet
			IEEE® 1588
			1x GE / 1x GE

freescale
QorIQ Qonverge

QorIQ Qonverge Features

The BSC9131 is a highly integrated device combining Power, StarCore and MAPLE architectures. The device includes the following features:

Core	• Power Architecture® subsystem including one e500 processor and 256 KB shared L2 cache
DSP	• StarCore SC3850 DSP subsystem including 512 KB private L2 cache
Baseband Acceleration	• MAPLE-B2F multi-accelerator platform engine supports functions that enable LTE-FDD/TDD, WCDMA (HSPA+) and CDMA2K wireless standards
Memory	• DDR3 memory interface with 32-bit data width (40 bits including ECC), up to 800 MHz data rate • Integrated flash controller for NOR, NAND and FPGA support
Security	• Dedicated security engine featuring trusted boot
RF Interface	• Antenna interface controller supporting three industry standard JESD207/three custom ADI RF interfaces (two dual port and one single port) • Two pulse width modulators (PWM) for control of external components • Three MAXIMs MaxPhy serial interfaces
Connectivity	• Two triple-speed Gigabit-Ethernet controllers featuring network acceleration including IEEE® Std 1588v2™ hardware support • USB 2.0 host and device controller • DMA controller with four bidirectional channels that serves both Power Architecture cores and DSP domains • UART, SPI, eSDHC, USIM and I²C controllers • GPIO, 16 32-bit timers

Freescale will provide commercial L1 and transport software. L2, L3 will be provided through our partner stack vendors:

• LTE-FDD/TDD and WCDMA (HSPA+) L1 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

BSC9131 Reference Design Board

For more information about the QorIQ Qonverge BSC913x family, visit freescale.com/QorIQQonverge