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Understanding [Embedded - Microprocessors](#)

Embedded microprocessors are specialized computing chips designed to perform specific tasks within an embedded system. Unlike general-purpose microprocessors found in personal computers, embedded microprocessors are tailored for dedicated functions within larger systems, offering optimized performance, efficiency, and reliability. These microprocessors are integral to the operation of countless electronic devices, providing the computational power necessary for controlling processes, handling data, and managing communications.

Applications of [Embedded - Microprocessors](#)

Embedded microprocessors are utilized across a broad spectrum of applications, making them indispensable in

Details

Product Status	Obsolete
Core Processor	PowerPC e500
Number of Cores/Bus Width	1 Core, 32-Bit
Speed	800MHz
Co-Processors/DSP	Signal Processing; SC3850, Security; SEC 4.4
RAM Controllers	DDR3, DDR3L
Graphics Acceleration	No
Display & Interface Controllers	-
Ethernet	10/100/1000Mbps (2)
SATA	-
USB	USB 2.0 (1)
Voltage - I/O	1.8V, 2.5V, 3.3V
Operating Temperature	-40°C ~ 105°C (TA)
Security Features	Boot Security, Cryptography, Random Number Generator
Package / Case	520-FBGA, FCBGA
Supplier Device Package	520-FCBGA (21x21)
Purchase URL	https://www.e-xfl.com/product-detail/nxp-semiconductors/bsc9131nxe1khkb



QorIQ Qonverge Platform

QorIQ Qonverge BSC9131 for Femtocell Base Station Solutions

Target Applications

Femtocell: Home or small office cellular base stations supporting the following standards:

- LTE-FDD/TDD
- WCDMA (HSPA+)
- CDMA2K
- TD-SCDMA

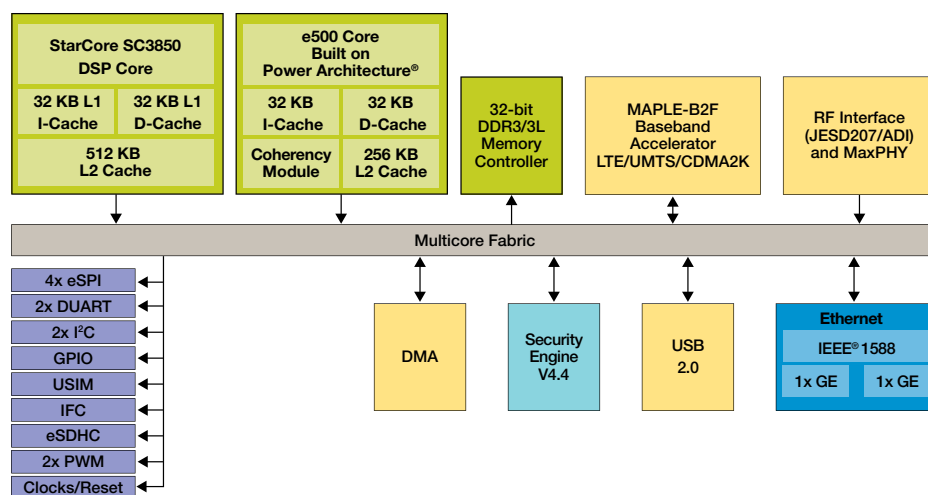
Overview

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



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

Freescall 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 Freescall
- L2/L3 software for LTE-FDD/TDD and WCDMA (HSPA+)–via partners
- Development tools and operating system software through Freescall and its ecosystem partners



BSC9131 Reference Design Board

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