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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           | 0°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                    | <a href="https://www.e-xfl.com/product-detail/nxp-semiconductors/bsc9131nle1hhhb">https://www.e-xfl.com/product-detail/nxp-semiconductors/bsc9131nle1hhhb</a> |



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

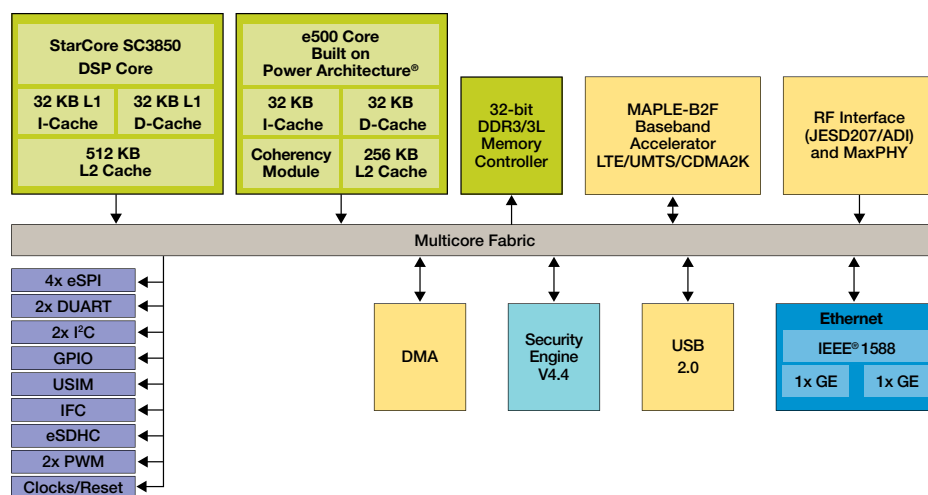
## Overview

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:

|                              |  |
|------------------------------|--|
| <b>Core</b>                  | <ul style="list-style-type: none"> <li>Power Architecture® subsystem including one e500 processor and 256 KB shared L2 cache</li> </ul>  |
| <b>DSP</b>                   | <ul style="list-style-type: none"> <li>StarCore SC3850 DSP subsystem including 512 KB private L2 cache</li> </ul>  |
| <b>Baseband Acceleration</b> | <ul style="list-style-type: none"> <li>MAPLE-B2F multi-accelerator platform engine supports functions that enable LTE-FDD/TDD, WCDMA (HSPA+) and CDMA2K wireless standards</li> </ul>  |
| <b>Memory</b>                | <ul style="list-style-type: none"> <li>DDR3 memory interface with 32-bit data width (40 bits including ECC), up to 800 MHz data rate</li> <li>Integrated flash controller for NOR, NAND and FPGA support</li> </ul>  |
| <b>Security</b>              | <ul style="list-style-type: none"> <li>Dedicated security engine featuring trusted boot</li> </ul>   |
| <b>RF Interface</b>          | <ul style="list-style-type: none"> <li>Antenna interface controller supporting three industry standard JESD207/three custom ADI RF interfaces (two dual port and one single port)</li> <li>Two pulse width modulators (PWM) for control of external components</li> <li>Three MAXIMs MaxPhy serial interfaces</li> </ul>   |
| <b>Connectivity</b>          | <ul style="list-style-type: none"> <li>Two triple-speed Gigabit-Ethernet controllers featuring network acceleration including IEEE® Std 1588v2™ hardware support</li> <li>USB 2.0 host and device controller</li> <li>DMA controller with four bidirectional channels that serves both Power Architecture cores and DSP domains</li> <li>UART, SPI, eSDHC, USIM and I²C controllers</li> <li>GPIO, 16 32-bit timers</li> </ul> |

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](http://freescale.com/QorIQQonverge)

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