



High-Performance Quad-Core DSP with Security

MSC8154E

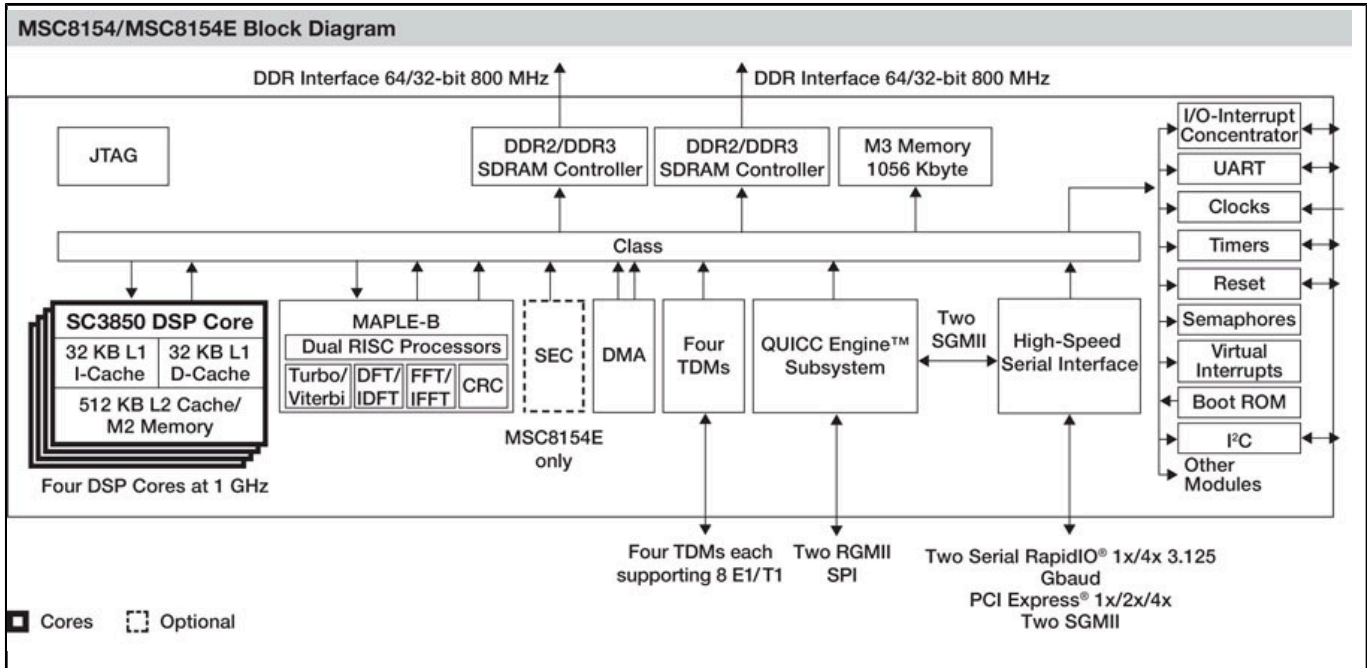
Last Updated: Apr 8, 2022

The MSC8154E device is one of Our fourth-generation high-end multicore DSP devices that target broadband wireless base stations and other communications infrastructure with security processing. The MSC8154E is a four-core DSP based on NXP's SC3850 StarCore® technology and designed to advance the capabilities of wireless broadband equipment. It delivers higher performance and power savings, leveraging 45 nm process technology in a highly integrated system-on-chip (SoC) to provide performance equivalent to a 4 GHz single-core device. The MSC8154E helps equipment manufacturers and carriers create solutions and services that enable near-term, mainstream adoption of next-generation wireless standards such as 3G-LTE, WiMAX, HSPA+ and TDD-LTE. The device is designed to lower system costs by integrating functionality into a single device that previously required multiple discrete parts.

The MSC8154E DSP delivers a high level of performance and integration, combining four fully programmable new and enhanced SC3850 DSP cores, each running at up to 1 GHz with an architecture highly optimized for wireless infrastructure applications. Developed by NXP® and integrated on-chip, the MAPLE-B baseband accelerator supports hardware acceleration for Turbo and Viterbi channel decoding and for DFT/iDFT and FFT/iFFT algorithms and includes CRC processing. An internal RISC-based QUICC Engine® subsystem supports multiple networking protocols to guarantee reliable data transport over packet networks while significantly offloading processing from the DSP cores.

The MSC8154E embeds large internal memory and supports a variety of advanced, high-speed interface types, including two RapidIO® interfaces, two gigabit Ethernet interfaces for network communications, a PCI Express® controller, two DDR controllers for high-speed, industry standard memory interface, four multi-channel TDM interfaces and a security encryption/decryption processor (SEC).

MSC8154 Digital Signal Processor Block Diagram Block Diagram



View additional information for [High-Performance Quad-Core DSP with Security](#).

Note: The information on this document is subject to change without notice.

www.nxp.com

NXP and the NXP logo are trademarks of NXP B.V. All other product or service names are the property of their respective owners. The related technology may be protected by any or all of patents, copyrights, designs and trade secrets. All rights reserved. © 2024 NXP B.V.