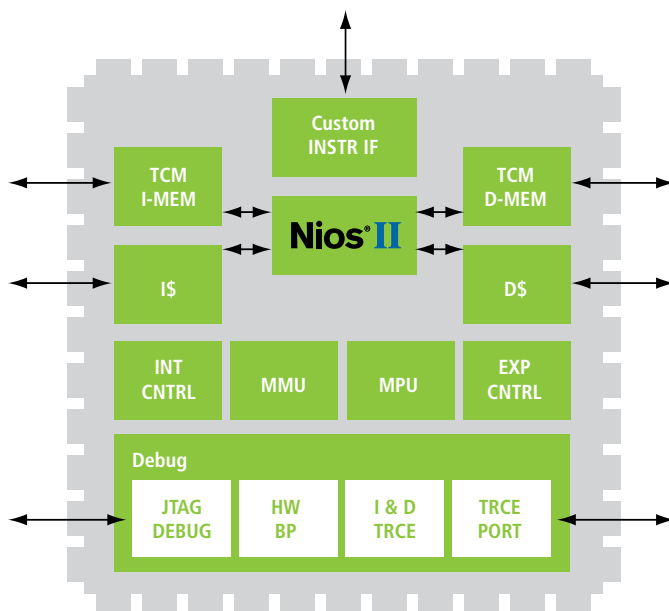


The broadest selection of soft processors in the FPGA industry

Altera's embedded processor portfolio

What do you get when you combine the versatility of programmable logic with the broadest portfolio of soft processors? A flexible design platform that scales to fit individual application needs, lowers system cost, and protects your software from obsolescence. Altera, together with ARM and Freescale, provide just that platform.



Nios II embedded processor

Altera's versatile Nios[®] II processor is the FPGA industry's leading soft processor. It features a streamlined, easy-to-use software development flow and the widest range of available operating system support.

Key features:

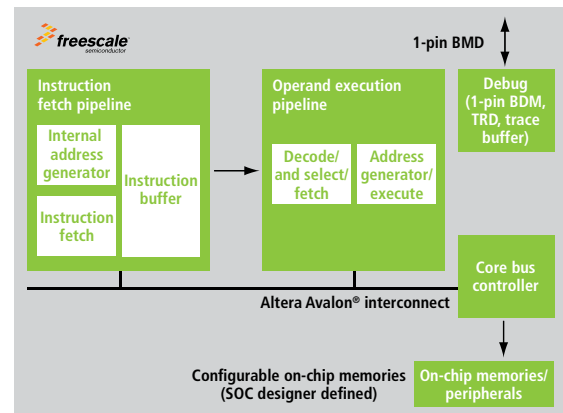
- Configurable to size-optimized -e core (600 logic elements (LEs)), performance-optimized -f core (up to 300 MHz), and size-/performance-optimized -s core (1,800 LEs @ 180 MHz)
- Streamlined up to six-stage 32-bit pipeline
- Configurable memory management unit (MMU)
- Configurable data and instruction caches
- Supports all Altera[®] devices: Stratix[®], Cyclone[®] and Arria[®] FPGAs, and HardCopy[®] ASIC families
- Seamless path to standard-cell ASIC as part of Synopsys Design Ware IP Suite
- DO-254 certifiable
- Supports custom instructions and hardware acceleration using the Nios II C2H Compiler

Freescale V1 ColdFire processor

The small-footprint Freescale V1 ColdFire core is designed for entry-level 32-bit applications. It enhances system utilization, resulting in low power consumption, while providing more than 10 times the performance of an 8-bit microcontroller unit (MCU).

Key features:

- 100 percent instruction set-compatible to all ColdFire family processors
- Supported by all existing ColdFire software ecosystems, including operating systems and tools
- 1-pin background debug mode (BDM), real-time debug (RTD) support; works with existing ColdFire debugging tools
- Optimized for Altera Cyclone III FPGAs ; SOPC Builder-compatible
- \$0 licensing fee and \$0 royalty for the core; commercial support available
- Variable-length RISC 16-bit, 32-bit, and 48-bit instructions
- 16 user-accessible, 32-bit wide general-purpose registers
- 32-bit data bus with 24-bit address bus supporting 16-MByte linear addressing
- 2-stage instruction fetch pipeline (IFP); 2-stage operand execution pipeline (OEP)

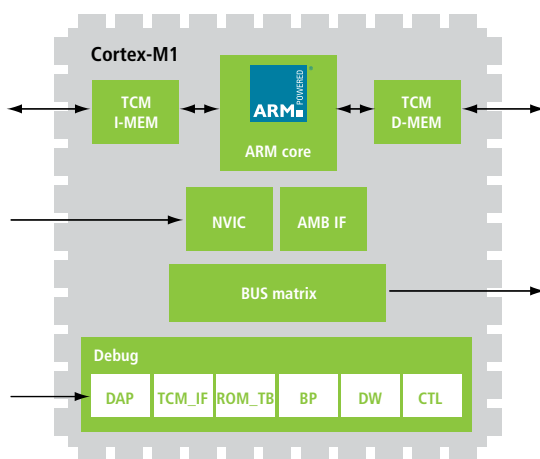


ARM Cortex-M1 processor

The ARM® Cortex-M1 processor addresses the need for a high-quality, standard processor architecture for Altera FPGA applications, allowing you to choose the optimal implementation for each project.

Key features:

- Streamlined three-stage 32-bit ARM Cortex processor
- SOPC Builder-ready, optimized for implementation in FPGAs; targets Cyclone III FPGAs
- Low-cost ARM Cortex-M1 Development Kit, including the ARM RealView® Microcontroller Development Kit
- Supported by a wide variety of tools and operating systems in the ARM Connected Community
- Streamlined licensing process
- Easy migration path to ARM processor roadmap
- Tightly coupled memories for rapid access to on-chip block RAM



Want to dig deeper?

Learn about Altera's embedded processor portfolio, design software, IP, and development kits at www.altera.com/embedded. You'll find information about all three embedded processors at this site. In addition, for information about ARM Cortex-M1, you can also contact Arrow Electronics (www.arrowelectronics.com) and for Coldfire V1 information, you can contact IP Extreme (www.ip-extreme.com).

Altera Corporation
101 Innovation Drive
San Jose, CA 95134
USA
www.altera.com

Altera European Headquarters
Holmers Farm Way
High Wycombe
Buckinghamshire
HP12 4XF
United Kingdom
Telephone: (44) 1494 602000

Altera Japan Ltd.
Shinjuku i-Land Tower 32F
6-5-1, Nishi-Shinjuku
Shinjuku-ku, Tokyo 163-1332
Japan
Telephone: (81) 3 3340 9480
www.altera.co.jp

Altera International Ltd.
Unit 11-18, 9/F
Millennium City 1, Tower 1
388 Kwun Tong Road
Kwun Tong
Kowloon, Hong Kong
Telephone: (852) 2945 7000

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