

Arm expands design possibilities with free Cortex-M processors for Xilinx FPGAs

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- Arm collaboration with Xilinx brings together the benefits of the industry's most robust and mature embedded ecosystem with the flexibility of Xilinx FPGAs
- Enhanced Arm DesignStart program will help embedded developers speed up and enhance FPGA projects with fast, free, easy access to proven Arm IP
- New no license fee, no royalties access model designed to help more developers benefit from industry-leading Arm technology, with a common software base across their entire device portfolio

As technology continues to pick up pace and push boundaries, the need for flexibility in product designs grows, contributing to a predicted 74% volume growth of the field programmable gate array (FPGA) / Programmable Logic Devices (PLD) market between 2016 to 2022.* This has led to greater pressure for OEMs to develop flexible, application-optimized designs at a faster pace and with less investment. To meet these demands, it is crucial for developers to have easy access to the most widely adopted processors and the broadest set of software, tools and know-how, whether on FPGAs, SoCs or single board computers (SBC).

Today at the Xilinx Developer Forum in San Jose, Arm has announced it is collaborating with Xilinx, the market leader in FPGAs, to bring the benefits of Arm Cortex-M processors to FPGA through the Arm DesignStart program, providing scalability and a standardized processor architecture across the Xilinx portfolio. It is now possible to gain fast, completely no cost access to proven, soft processor IP, easy design integration with Xilinx tools and comprehensive software development solutions to accelerate success on FPGA.

Cortex-M processors give embedded developers the opportunity to design confidently, innovate and benefit from simplified software development and superior code density. In addition, they have the support of the broadest technology ecosystem of software, tools and services providing a valuable and accessible path on which to scale products.

Developers can choose from a spectrum of options by considering factors such as design requirements, budget, resource availability and time-to-market, all critical in an increasingly connected world with a vast range of applications and needs. Options include SBCs, off-the-shelf chips, FPGAs and custom silicon. Product manufacturers can establish a competitive advantage through the design flexibility and differentiation offered by more application-optimized FPGA and custom silicon designs. By choosing Arm for FPGA, designers can accelerate success with:

- **Maximum choice and flexibility:** easy and instant access to Cortex-M1 (an FPGA-optimized version of the Cortex-M0 processor) and Cortex-M3 soft processor IP for FPGA integration with Xilinx products – all for no license fee and no royalties
- **Reduced software costs:** by making it possible to get maximum reuse of software across an entire OEM's product portfolio on a standardized CPU architecture, scaling from single board computers through to FPGAs
- **Ease of design:** easy integration with Xilinx system and peripheral IP through Vivado Design Suite, using a drag-and-drop design approach to create FPGA systems with Cortex-M processors

- **Reduced time-to-market:** access to an extensive software ecosystem and knowledge base of others designing on Arm, which includes Arm Keil MDK, a full-featured software development suite for Arm-based microcontrollers

Enhanced Xilinx-based designs

Arm's partnership with Xilinx opens the flexibility benefits of Arm processors for all developers. Arm for FPGA simplifies development on a consistent architecture spanning Xilinx's Spartan, Artix and Zynq portfolios. The Arm and Xilinx collaboration enables developers to take advantage of the benefits of heterogeneous compute on a single processor architecture by using the Cortex-A processors built in to the Zynq SoC portfolio alongside the newly available Cortex-M soft IP in DesignStart. By allocating processing tasks to the right compute engine, whether high performance Cortex-A, real-time Cortex-M or custom logic, developers can create more sophisticated products.

Building on the success of Arm DesignStart

The DesignStart program has been providing fast access to Arm IP since 2010. DesignStart helps companies to design with the lowest risk possible by offering fast access to proven Arm IP and subsystems for a low or \$0 upfront fee while providing a wealth of resources, support, tools and design services through our ecosystem. In the past 12 months alone, we have seen more than 3,000 prototyping downloads and signed more than 300 commercial licenses for our processors through DesignStart. The addition of Cortex-M processors for FPGA provides even more access for developers as we continue to drive towards our vision of a trillion connected devices.

For more information, visit: designstart.arm/fpga

**Source: Gartner, Inc., Semiconductor Forecast Database, Worldwide, 2Q18 Update, July 2018*

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About Arm

Arm technology is at the heart of a computing and connectivity revolution that is transforming the way people live and businesses operate. Our advanced, energy-efficient processor designs have enabled intelligent computing in more than 125 billion chips. More than 70% of the world's population are using Arm technology, which is securely powering products from the sensor to the smartphone to the supercomputer. This technology combined with our IoT software and end-to-end connectivity, device and data management platform enables customers to derive real business value from their connected devices and data. Together with our 1,000+ technology partners we are at the forefront of designing, securing and managing all areas of compute from the chip to the cloud.

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