

FPGA & SoC TechBytes

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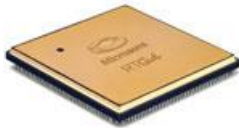
Issue 7

Arrow PolarFire Workshops; don't miss out!



There's still plenty of time to sign up for an Arrow Electronics PolarFire workshop. Each attendee will use Arrow's new, low-cost [Everest Development Kit](#) to learn how to create an FPGA design using the [Libero SoC PolarFire Design Suite](#). The workshop will also cover building a [Mi-V RISC-V](#) design using Libero as well as the SoftConsole IDE for the rapid production of C and C++ executables for Microsemi FPGAs. The cost of the course is \$99, and each attendee will receive a \$100 voucher for use on Arrow.com. Click [here](#) for more information.

RTG4 Achieves Industry First with QML Class V Qualification



The Defense Logistics Agency has given the [RTG4™](#) radiation-tolerant FPGA family its Qualified Manufacturers List (QML) Class V qualification. The designation is the highest level of qualification for [space](#) components and a necessary step to satisfy mission assurance requirements on many space programs. RTG4 is the first and only radiation-tolerant FPGA offering more than 150,000 logic elements to achieve a QML Class V qualification. The qualification means developers of Class 1 space flight systems can bring the cost and schedule advantages of FPGAs to the most demanding space missions by using RTG4.

LX7720 Production Sampling Now Available

The second member of Microsemi's [Space Systems Manager Family](#), the [LX7720](#) device offers the highest-levels of integration for positioning and control applications in space. Typically, these functions are implemented with many discrete devices or smaller scale integration. The LX7720 opens the door to reducing board space by 50 to 70 percent, decreasing weight, and increasing reliability as fewer components are used for functions such as servo controls and motor drivers. Production silicon is now being made available for customers to evaluate the LX7720 in their designs and board layouts.

- Design Tool Updates -

Libero SoC PolarFire v2.3 Now Available

The latest release of the Libero SoC PolarFire Design Suite is ready for [download](#), supporting programming for MPF100 and MPF500T pre-production (PP) devices, and updating the timing and power for all family members. The new release optimizes the AXI4 interface for DDR3, DDR4, and LPDDR3 memories with reduced resource consumption, and improved Fmax. Click [here](#) for more detailed information including enhancements to SmartPower and programming.



Lower Static Power PolarFire FPGAs Introduced



With version 2.2 of the [Libero® SoC PolarFire Design Suite](#), we introduced lower static power devices to the PolarFire field-programmable-gate array (FPGA) family. The "L" series PolarFire devices deliver 30 percent lower static power over standard PolarFire FPGAs, making them ideal for low power portable defense and professional grade consumer systems.

Libero SoC v11.9 Released

The Libero SoC Design Suite is available for download. The new version integrates Synplify Pro ME L2016.09MSP1-5, which was previously available as a standalone version. Meanwhile, QoR for SmartFusion2, IGLOO2, and RTG4 have been improved. The new release also introduces -1 speed-grade for the RT4G150-CQ352 device. Click [here](#) to learn more.



SoftConsole 5.3 Integrates antmicro's Renode Platform **SoftConsole**

Version 5.3 of the [SoftConsole](#) IDE for enabling quick C and C++ development now comes integrated with Antmicro's Renode embedded platform. From their Eclipse-based SoftConsole IDE, users now have direct access to a virtual hardware environment for embedded software development. Click [here](#) to download the latest version.


- Solutions and IP -

Deep Learning Solution for Low-Power Neural Networking



[Accelerate partner ASIC Design Services's](#) Core Deep Learning IP delivers a scalable and flexible Convolutional Neural Network (CNN) solution for Microsemi FPGAs. Their Core Deep Learning is the product of a scalable framework that offers the opportunity to stipulate the desired performance, platform specifications, and resource constraints for an application. Core Deep Learning can scale to each customer's unique requirements by using search and simulation algorithms that provide optimal solutions on a per-implementation basis.

Implement DisplayPort with new IP from Bitec

 Bitec's DisplayPort™ intellectual property (IP) core optimized for PolarFire™ FPGAs is now [available](#). The core gives designers the ability to take advantage of the PolarFire family's smaller size and 50 percent lower power to enable stunning image quality in small formfactor embedded displays and monitors. Supporting resolutions as high as 8K (7680 x 4320 pixel) ultra-high definition (UHD) video, the IP supports up to four streams so multiple monitors can use a single DisplayPort connection, lowering system costs and speeding time to market.

Zephyr Project joins Mi-V RISC-V Embedded Ecosystem



The Zephyr OS, a Linux Foundation collaboration to build a real-time operating system (RTOS) for the Internet of Things (IoT), has been ported to the [Mi-V RISC-V soft CPU](#) available with the IGLOO2 Mi-V RISC-V Creative Board ([FUTUREM2GL-EVB](#)) designed by Future Electronics. The Creative Board features a 25K LE (logic element) [IGLOO2 FPGA](#) pre-programmed with a 32-bit soft-core RISC-V processor and peripherals. Click [here](#) to learn more about the port, and download source files.

- New Kits and Boards -

Buy an Arrow Everest Board, Get a Libero Gold License

Arrow Electronics has released its Everest Evaluation Board for PolarFire FPGAs. The board comes with a 1-year Libero Gold License worth \$995, an excellent deal given the board's \$499 price tag! The board features an MPF300TS PolarFire device and standard interfaces including three RJ45 connectors for 10/100/1000 Mbps ethernet, eight full duplex transceiver lanes connected through an FMC connector, DDR3 memory, SFP+ cage, HDMI, FashPro 5 and USB UART, plus much more. For more information, please visit the [Arrow Everest Board web page](#).



Sundance DSP Delivers PolarFire SOM



Sundance DSP is out with a PolarFire system on module that's ideal for high-security applications where low power and small size is critical. Based on the PolarFire FPGA MP300 device in an FCVG484 package, the SoM-3-MPF300T has a small footprint of just 40x50mm and can be plugged into Sundance's EMC2-DP carrier card. For more details, visit the [PolarFire SoM 3 web page](#).

- Archived Webinars and Training -

- [LiberoDesign Suite Overview](#)
- [Enhanced Constraints Flow Overview 2018](#)
- [Embedded Design Flow using SoftConsole and Mi-V](#)
- [SmartDebug Live Probe](#)
- [SmartDebug Active Probe](#)

- Events and Workshops -

- [RADECS 2018 – Gothenburg, Sweden: Sept. 16 - 21](#)
- [Arrow and Microsemi PolarFire FPGA Workshop – North America: Sept. 13 – Nov. 13](#)
- [RISC-V Day – Tokyo, Japan: Oct. 18](#)
- [MEWS – Tsukuba, Japan: Nov 8 – 9](#)
- [Electronica Europe – Munich, Germany: Nov. 13 – 16](#)
- [RISC-V Summit– Santa Clara, CA: Dec. 3-6](#)

- News and Articles -

[Microsemi PolarFire FPGAs Enable Smallest, Lowest Power DisplayPort Implementations with New IP from Bitec](#)

[Microsemi's PolarFire FPGAs Ideal for Portable Design with Latest Release of Libero SoC PolarFire Design Suite](#)



[Microsemi Accepts Prestigious Electrons d'Or Award on Behalf of RISC-V Foundation](#)

[RISC-V: Opening a New Era of Innovation for Embedded Design](#)

[Power, cost, performance, and security demands put mid-range FPGAs on new process roadmap](#)

[Microsemi RTG4 FPGAs Become Industry's First High-Speed Signal Processing Radiation-Tolerant FPGAs to Achieve QML Class V Qualification](#)