Build Flexibility and Differentiation Into Your Next Low Power SoC

ArcticPro™

Designers of SoCs know that market requirements can change faster than the typical development time for a new device. The best way to solve this problem is to have flexible hardware that enables feature changes and additions without lengthening development cycles even further. Embedding ArcticPro™ ultra-low power eFPGA technology is an ideal solution that allows SoCs to be customized post-production without expensive and time-consuming redesign. The eFPGA approach also allows developers to create SoC platforms that can easily be tailored to serve multiple target applications.

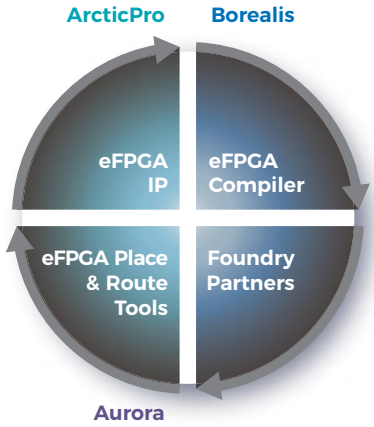
The QuickLogic Solution

Embedded FPGA IP

QuickLogic's ArcticPro ultra-low power eFPGA currently supports 65nm and 40nm processes and is being designed for the 22nm process.

Aurora™ and Borealis™ Design Tool Suite

The Borealis eFPGA Compiler enables SoC designers to easily evaluate, target and define custom eFPGA logic cell array sizes and generate all the necessary design files for SoC integration.



Borealis Compiler

- Easily defines the size of the eFPGA array
- Generates all necessary files for SoC integration (.cdl, .v, .lib, .lef and .gds)

Aurora Place & Route Tools

- FPGA standard flow
- Synthesis: Mentor Graphics Precision
- Simulation: Compatible with industry standard EDA simulators (NC-Sim, VCS, Questa, ModelSim)
- Dynamic FPGA size estimation and size configurator
- Back annotated timing data for performance analysis
- Power calculator
- Standard TCL command line flow supported

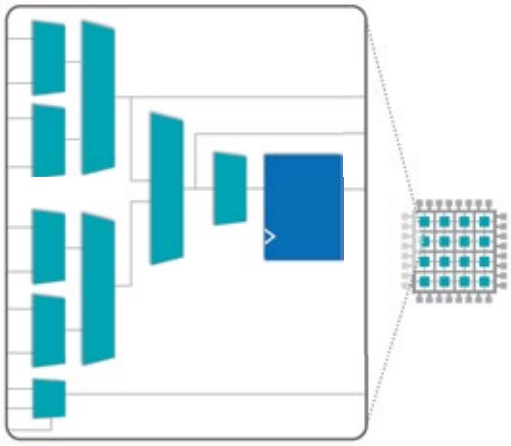
Why Embedded FPGA

- **Flexibility** – Enables complex functionality with the ability to make post-fabrication changes
- **Ultra-Low Power Consumption** – Optimized from the ground up for low power
- **Increased Performance** – Eliminates chip-to-chip delays
- **Increased Revenues and Margins** – Creates closer match to market requirements and greater market longevity
- **Lower R&D Costs** – Reduces total development cost and time to accommodate a wide selection of end products and product variants
- **Fast Time to Market** – Ability to make post-fabrication changes eliminates the need to redo masks

www.quicklogic.com

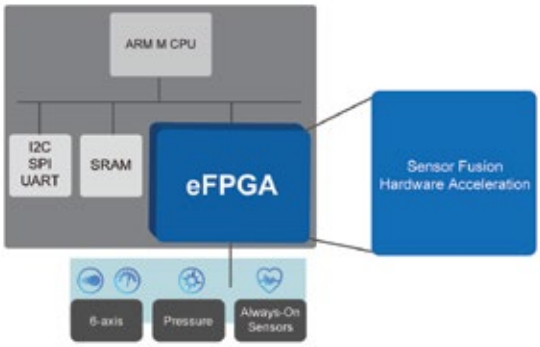
ArcticPro eFPGA

- Efficient Architecture: High logic cell utilization
  - Fine-Grain Architecture – Can implement multiple input functions
- Flexible Flip Flop
  - Flip flop can be driven by logic in the cell
  - Flip flop can be used independently of the logic in the cell
- Highly Routable Architecture
  - Reduces routing delays
  - Multi-drop routing for better routing resource utilization
  - Array sizes ranging from 16x16 logic cells up to 64x64 logic cells



eFPGA Use Case – Microcontroller Sensor Hub

An always-on sensor hub requires precise timing for sensor data acquisition, and a lot of calculations—a task that is better handled by hardware than software. In this use case, the eFPGA can be used to run sensor fusion at a very low power level, while letting the main CPU sleep until relevant fused data is available.



If you have questions regarding Embedded FPGAs, please send an email to eFPGA@quicklogic.com.

QuickLogic

About QuickLogic: QuickLogic Corporation (NASDAQ: QUIK) enables OEMs to maximize battery life for highly differentiated, immersive user experiences with Smartphone, Wearable and IoT devices. QuickLogic delivers these benefits through industry leading ultra-low power customer programmable SoC semiconductor solutions, embedded software, and algorithm solutions for always-on voice and sensor processing. The company's embedded FPGA initiative also enables SoC designers to easily implement post production changes without expensive and time-consuming redesign. For more information about QuickLogic, visit **www.quicklogic.com**.

Corporate Headquarters:
Sunnyvale, CA USA | 1-408-990-4000 | info@quicklogic.com

Sales Offices: www.quicklogic.com/corporate/about-us/locator/

North America: america-sales@quicklogic.com | China: asia-sales@quicklogic.com | Japan: japan-sales@quicklogic.com

Korea: korea-sales@quicklogic.com | Taiwan: asia-sales@quicklogic.com | Europe: europe-sales@quicklogic.com

4-4-2017