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PRODUCT BRIEF

UNIVERSAL RISC-V CONTROLLER

ULTRA LOW-FOOTPRINT PROCESSOR

OVERVIEW

Bluespec's Universal RISC-V Controller (URC) family is a RISC-V controller optimized for minimal resource cost implementation in FPGAs and ASICs. The URC prevents vendor lock-in by being fully portable across all major FPGA architectures and ASIC Technologies with no licensing restrictions. Bluespec's URC embedded processor is ideal for applications which require a small processor for configuration and control of custom modules, IO devices, sensors, actuators and accelerators as well as software-programmable replacements for fixed-hardware Finite State Machines.

The RISC-V URC is able to operate at a high frequency, allowing for integration into designs without crossing clock domains. Designs that do not require a high frequency operation benefit from extra timing slack and will not impact timing closure.

URC FAMILY FEATURES

- Three family varients (MCU-Lite, MCU, and MCU-Accell)
- RV32 Base Integer (I)
- Multiply/Divide (M) and Compressed (C) Instruction extension options
- Portable across all FPGA and ASIC technologies
- Ultra-low area footprint
- Machine-mode privileged level
- Fmax Up to 250Mhz in FPGAs
- Unified or Seperate Tightly Coupled Memories (4K-256K)

Bluespec offers a free evaluation which provides a complete RISC-V processor solution, ready for implementation on FPGAs and ASICs. Click here to get started.

- Verilog code and synthesis scripts for Xilinx, Intel, Achronix, Microchip
- Reference designs for the VCU118, Arty A7, and DE10-Lite
- Software examples, including FreeRTOS and benchmarks
- Documentation – User Guide, RISC-V ISA Reference, and Application Notes
- Open-source tool chain support – GNU and OpenOCD

Click here or contact sales@bluespec.com to get started with using RISC-V in your next design!

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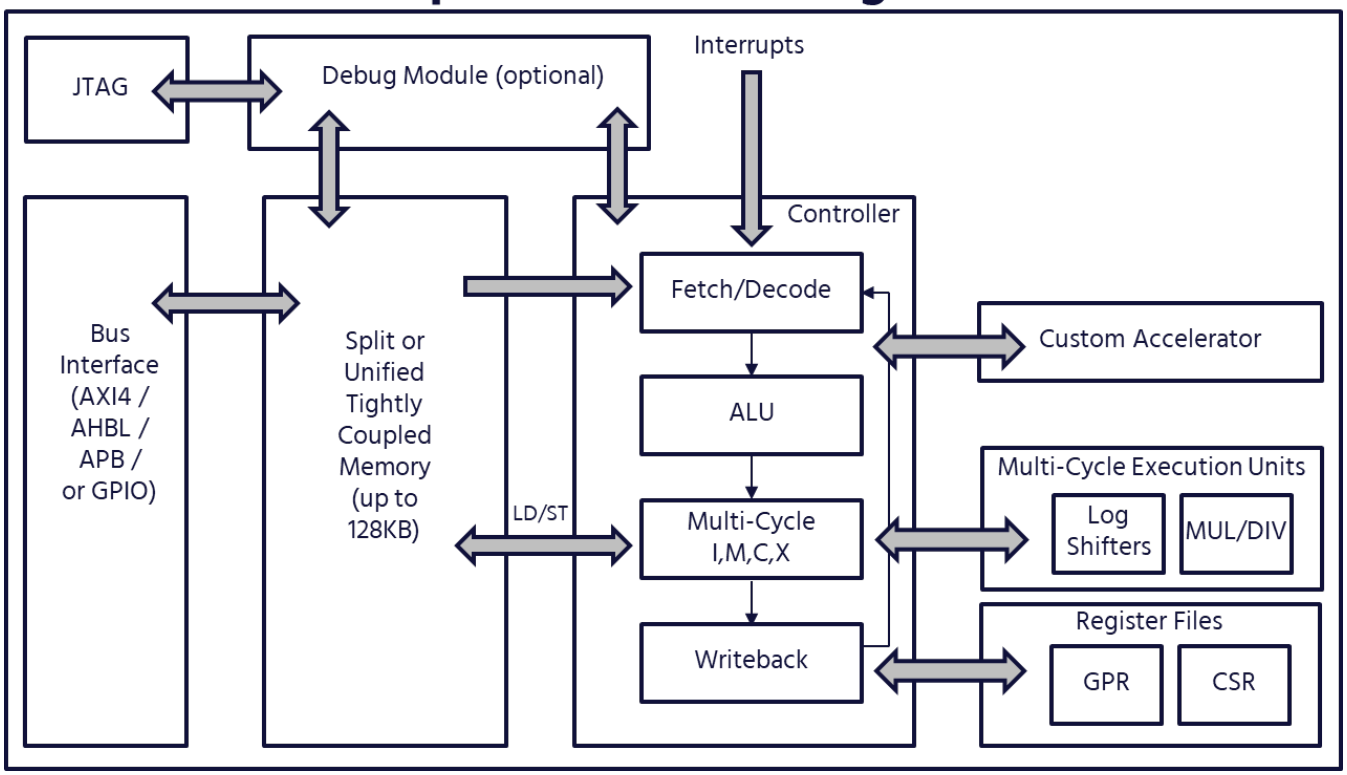
Bluespec URC Block Diagram



Universal RISC-V Controller Family

MCU-Lite

- Lowest footprint
- RV32I
- Basic interrupts
- Utility processor
- C-code execution

MCU

- Low Footprint
- RV32I/M/C
- RISC-V Machine mode
- Microcontroller
- RTOS capable

MCU-Accel

- Low Footprint
- RV32I/M/C/X
- RISC-V Machine mode
- Accelerator controller
- RTOS capable

Bluespec's URC Family Advantages

Complete IP package: Everything required to start developing with URC cores immediately.

Prevent vendor lock-in: Design once, use across all FPGA and ASIC vendors.

Hassle free licensing: No royalties, project fees, or complex IP legal transactions.

Commercial support: Dedicated RISC-V experts to respond to customer support requests.

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