

USBHS-DEV

USB 2.0 High Speed Device Controller

MAJOR FEATURES

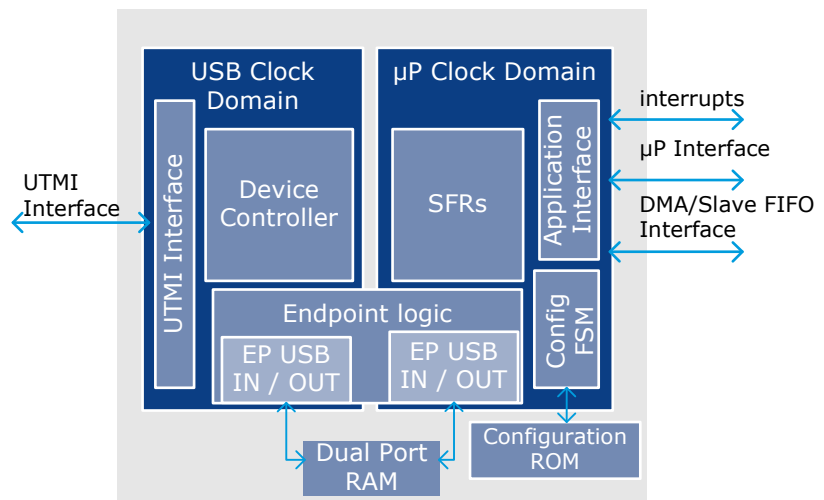
- ◆ Compliance with the USB 2.0 specification
- ◆ Up to 15 In and 15 Out endpoints
- ◆ 8-/16-bit UTMI or 8-bit ULPI PHY interface
- ◆ AMBA® AHB, PVICI or Generic CPU interface
- ◆ Optional protocol-aware DMA controller
- ◆ Suspend and resume power management functions

OVERVIEW

The **USBHS-DEV** logic provides USB High-speed/Full-speed (480/12 Mbps) function interface that meets the 2.0 revision of the USB specification.

A variety of available interfaces for both PHY and CPU facilitates the controller's implementation in different development environments. Both FIFO interface and DMA controller speed up overall system performance, however, while the built-in FIFO interface is best-suited for handling data streams coming from master devices, an optional DMA controller enhances **USBHS-DEV**'s functionality with ability to access slave devices. A dedicated software stack and support for various USB classes are available to simplify application development. An off-the-shelf **USB High Speed Application Platform** integrates all hardware and software elements necessary for a successful end user application design.

BLOCK DIAGRAM



USBHS-DEV

BENEFITS

- ◆ Easy implementation in various development environments
- ◆ Variety of available configurations
- ◆ Dedicated software and hardware support

APPLICATIONS

- ◆ Mass storage applications
- ◆ Audio/Video applications
- ◆ Communication devices
- ◆ Digital cameras
- ◆ Networking
- ◆ Digital Media Controllers

CONFIGURABILITY

The following parameters allow adjusting the **USBHS-DEV** to requirements of target application or technology:

- ◆ PHY interface
- ◆ CPU interface
- ◆ Up to 16 IN and OUT endpoints
- ◆ Implementation of the DMA engine
- ◆ DMA data bus width
- ◆ Number of DMA channels

RELATED PRODUCTS

USBHS-51 – a USB 2.0 device software stack designed to take full advantage of the **R8051XC2** microcontroller and the **USBHS-DEV**.

R8051XC2 – the world's fastest and most configurable 8051 microcontroller. It runs 12.1 times faster than the original Intel™ 80C51 and is available in 7 predefined configurations.

USB 2.0 High Speed Application Platform – a complete System-on-Chip solution that integrates the **R8051XC2** microcontroller with the **USBHS-DEV**, while complementary **USBHS-51_SS** software stack further facilitates application development and FPGA prototyping processes.

STANDARD DELIVERABLES

- ◆ VHDL/Verilog source code
- ◆ Synthesis support for Synopsys® tools with a set of synthesis scripts
- ◆ Simulation support for Mentor Graphics® or Cadence® tools with a set of scripts and macros
- ◆ Extensive HDL testbench
- ◆ Additional documentation:
 - ▶ Design Specification
 - ▶ Verification Specification
 - ▶ Test Plan
 - ▶ Integration Manual
 - ▶ User Guide
- ◆ Design support including consulting
- ◆ 30 days of technical support
- ◆ 90 days of warranty against defects

DELIVERY OPTIONS

- ◆ EDIF netlist for FPGA and low volume production
- ◆ Evaluation system for proprietary **EB5-Tiny** board
- ◆ One-year maintenance
- ◆ On-site support

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