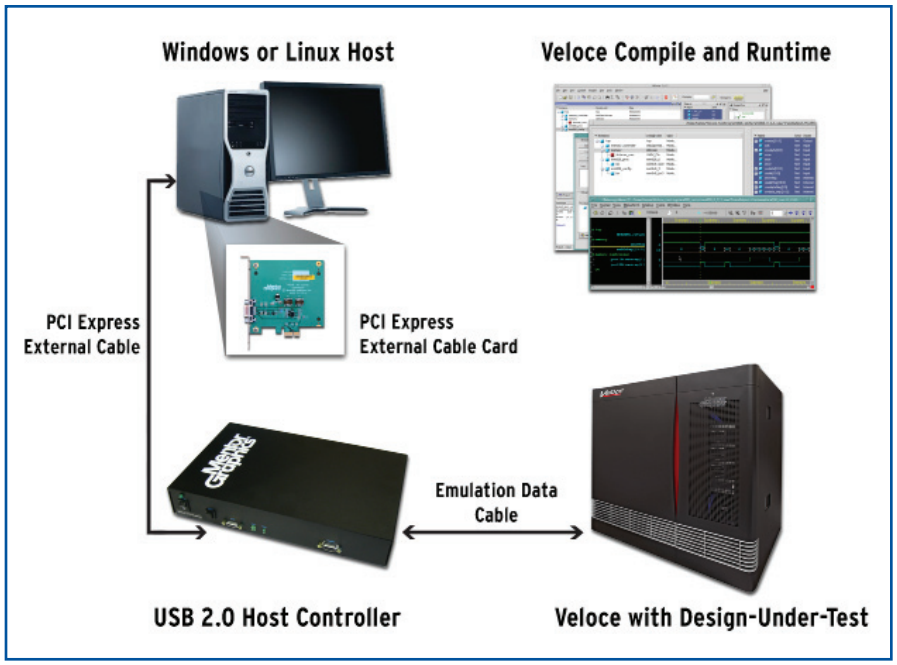
Hardware-Based
Functional Verification

iSolve USB Host Controller

D A T A S H E E T



iSolve USB Host Controller uses EHCI controller IP, providing an emulation speed USB interface to a peripheral device in Veloce.

iSolve™ USB Host Controller is an emulation solution for developing and testing software applications that communicate with a USB peripheral device port running inside a Veloce™ emulator. Used together, Veloce and the iSolve USB Host Controller increase the overall productivity of your system-level verification by providing an industry-standard Enhanced Host Controller Interface (EHCI) that connects to a PC running a user's software application along with either standard Windows or Linux class drivers or custom drivers for the USB device. Your software can, thus, access the design-under-test (DUT) containing the USB peripheral port in the Veloce emulator.

The Veloce emulation environment, combined with the iSolve USB Host Controller, runs several orders of magnitude faster than software simulation. This meets the requirements of system-level engineers running concurrent hardware and software for the verification of a USB 2.0 peripheral device.

FEATURES AND BENEFITS

- High Speed (HS) USB peripheral device support
- Flexible connectivity to the design via either UTMI+ or ULPI standard interfaces
- Standard USB transfer types: control, interrupt, and bulk
- Veloce emulation interface supports 8-bit/16-bit UTMI and ULPI options
- Uses standard Windows or Linux class drivers or custom drivers developed for the design
- Unique iSolve Visibility Port interface captures and analyzes streamed USB transfer data from within the Host Controller

PRODUCT SPECIFICATIONS

- OS Support (Host PC): Linux and Windows
- OS Support (Visibility Port): Red Hat Enterprise 4 (64-bits), SuSE SLES 10.1 (64-bits)
- Platforms: Veloce Solo, Quattro, Grande, and Maximus
- Performance: Up to 1.5 MHz in emulation
- USB Specification: v2.0 High-Speed (HS)

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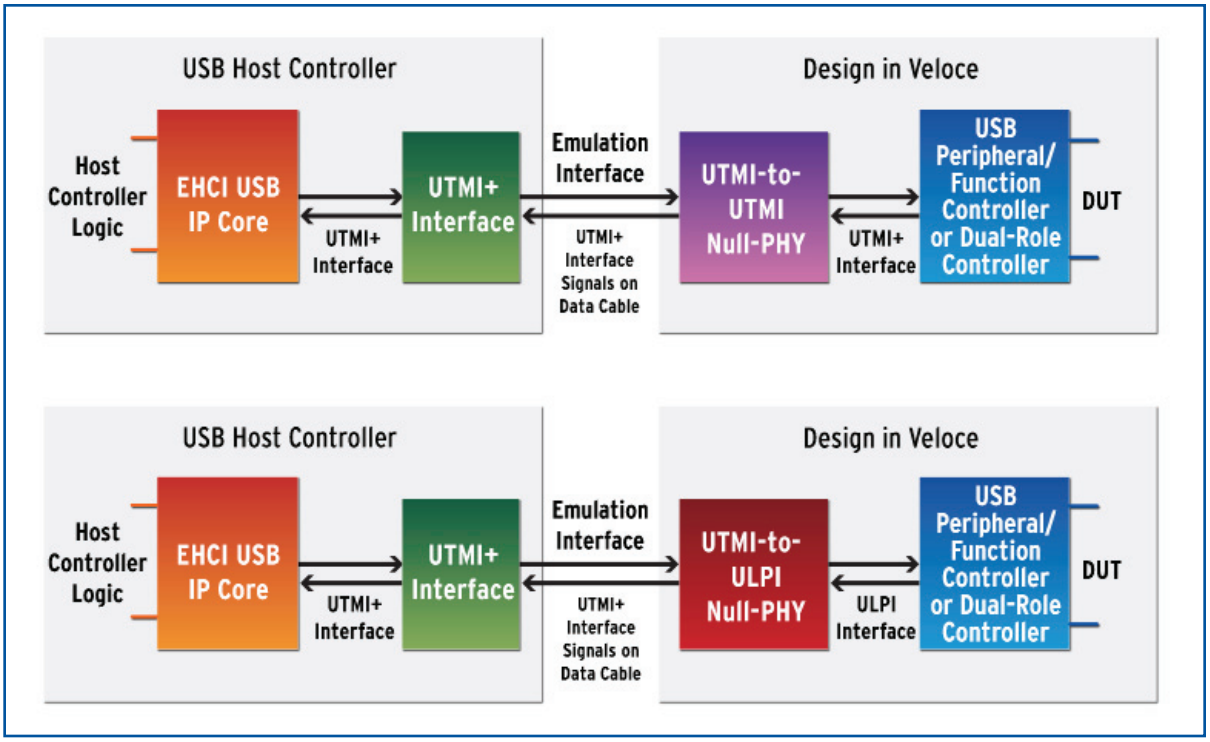
The EHCI controller IP provided within the iSolve USB Host Controller communicates with the Windows or Linux PC over a PCI Express interface, which plugs into a standard PCI Express backplane slot on the PC and delivers a high-speed communication channel. The communication with the DUT running in Veloce is provided over a standard USB UTMI or ULPI interface, as required.

iSolve USB Host Controller provides simple connections to the hardware emulator and host workstation for plug-and-play usage. Emulation debug can be provided through the iSolve USB Host Controller Visibility Port, which provides a streamed data connection to the USB transfer data exchanged between the host workstation and the DUT. This streamed connection can be made directly to the Veloce emulation host, and the resulting visibility is unique to the Mentor Graphics iSolve family of Speed Adapter and Host Controller products.



iSolve USB Host Controller connects to the DUT with standard UTMI+ or ULPI interfaces.

Visit our website at www.mentor.com/emulation for more information.

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