

asureVIP™ from TVS

TVS USB 3.0 OVM HOST VIP

OVERVIEW

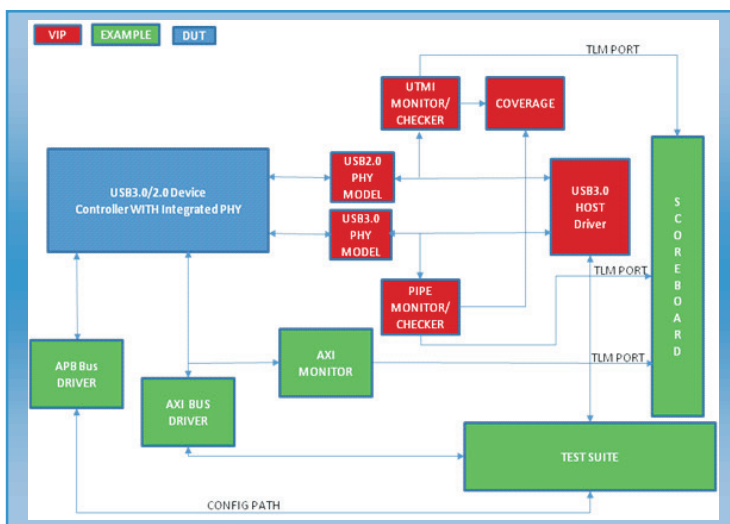
Test and Verification Solutions offers an USB 3.0 OVM HOST VIP as part of its asureVIP™ series of offerings. This is a highly flexible and configurable verification IP, which can be easily integrated into any SOC verification environment or Block level verification environment.

The TVS OVM based USB3.0 Host VIP supports both USB3.0 and USB2.0 functionalities. It has been entirely programmed in System Verilog and it provides support for OVM, UVM based testbenches.

The VIP comes with a protocol BUS Monitor which checks for non-compliance with USB3.0/2.0 protocol violations these are reported by monitors connected to PIPE and UTMI.

USB 3.0 VIP supports Bulk, Control, Isochronous and Interrupt transfers. It supports SuperSpeed (SS), High Speed (HS), Full Speed (FS) and Low Speed (LS) which enables engineers to verify speed negotiation between SS, and 2.0 FS, HS, LS.

BLOCK DIAGRAM



Test and Verification Solutions

FEATURES

PHYSICAL LAYER

- USB 2.0 and USB 3.0 PHY Layer Supported

LINK LAYER

- Full LTSSM Support (PIPE Interface)
- Ordered Sets Support
- Cable Unplug & Re-plug Scenarios
- Auto Speed change detection (HS/FS/SS)
- Power management Suspend & Resume
- Support Low Power State (U1,U2,U3)

PROTOCOL LAYER

- The protocol based test category verifies the packet fields for different types of USB packet transfers
- Transfer level tests include control read and write for two and three stage transfers, bulk IN and OUT transfers, ISO IN and OUT transfers and the Interrupt IN and OUT
- Data Bursting
- SS Bulk Stream
- LMP, LPM and ITP Generation
- Flow Control support (ACK/RETRY/NUMP/NRDY...)



asureVIP™ from TVS

TVS USB 3.0 OVM HOST VIP

TECHNICAL SPECIFICATION

Part Number	asureVIP_USB3_H
Description	USB 3.0 OVM HOST VIP
Provider	Test and Verification Solutions
Languages Supported	System Verilog
Methodology	OVM 2.1.1
Simulators	Cadence Incisive, Mentor Questa
Compliance	USB 3.0 Specification
Availability	December 2011

ABOUT US

TVS delivers an independent verification service that not only reduces your costs and time-to-market, but also improves product quality.

TVS combines skills and experience in software testing, hardware verification and outsourcing to provide customers with an efficient, well-managed, quality assurance service.

TVS provides both consultancy and execution services using experienced engineering resources in several locations around the world. TVS removes the pain and risk from outsourcing leaving you with just the benefits.

To learn more about our offerings, write to us at vip@tandvsolns.co.uk

Test and Verification Solutions reserves the right to change this document without prior notice and disclaim all warranties. It is the recipient's duty to confirm with Test and Verification Solutions Engineering Department specifications before proceeding with a product design. This document is confidential and should not be reproduced without Test and Verification Solutions approval.

asureVIP and the TVS logo are trademarks of Test and Verification Solutions.

©2011 Test and Verification Solutions, Bristol, UK. All rights reserved.

June 2011 Version 1.0

Test and Verification Solutions

OTHER FEATURES

- Error Injection capability in all Layers
- Functional Coverage
- Extensive Call Backs & Messaging
- USB 3.0 Superspeed Host VIP is being validated against Silicon Proven USB 3.0 Device RTL

BENEFITS

- Highly Flexible, Independent and Configurable USB 3.0 Host VIP
- Proven against Silicon Proven VIP
- Less TAT in integrating into SOC Verification environments

DELIVERABLES

- USB 2.0/3.0 Host Controller OVM VIP
- UTMI Monitor, PIPE Monitor
- Fast BUS Monitor/Driver (AXI BUS) – DATA
- Slow BUS Monitor/Driver (APB Bus) - CONFIG
- Test Suite, User Guide



Test and Verification Solutions
SETsquared Business Acceleration Centre
University Gate East, Park Row
Bristol BS1 5UB

Telephone: +44 (0)117 903 1100
Mobile: +44 (0)7796 307958
vip@tandvsolns.co.uk
www.tandvsolns.co.uk