

UART

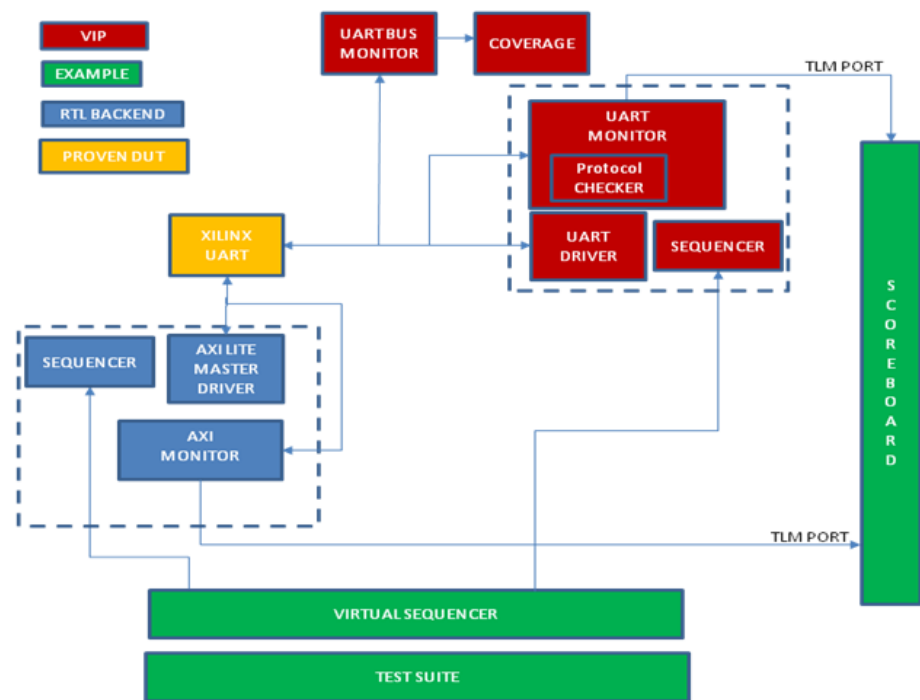


asureVIP™

UART UVM VIP

Test and Verification Solutions offers a UART UVM 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. The TVS UVM Master VIP (AXI4-LITE) supports UART and UART16550 Modes. It was used in successfully verifying a DUT, later silicon proven.

The VIP comes with a Bus Monitor for performing all protocol checks. The monitor also performs protocol checks and reports errors for non compliance with National Semiconductors UART Specification.



Overview

VIP:	UART
Compliance:	National Semiconductor PC16550D June 1995
Language:	System Verilog
Methodology:	UVM 1.1
Simulators:	Cadence Incisive, Mentor Questa and Aldec Riviera PRO

Deliverables

- UART UVM VIP
- Sample Testbench (Integrated with proven XILINX UART VIP)
- Sample Virtual Sequencer
- Sample Scoreboard
- VIP user guide

Key Benefits

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

Technical Specifications

- Independently controlled transmit, receive, line status, and data set interrupts.
- Programmable baud generator divides any input clock by 1 to $(2^{16} - 1)$ and generates the 16 clock.
- Independent receiver clock input.
- MODEM control functions (CTS, RTS, DSR, DTR, RI and DCD).
- Fully programmable serial-interface
- 5-, 6-, 7-, or 8-bit characters
- Even, odd, or no-parity bit generation and detection
- 1-, 1/2-, or 2-stop bit generation
- Baud generation (DC to 1.5M baud).
- False start bit detection.
- Complete status reporting capabilities.
- TRI-STATE TTL drive for the data and control buses.
- Line breaks generation and detection.

Other VIPs Available

- **ARM:** AXI, APB, AMBA ACE and CHI
- **Hi-Speed Interface:** Ethernet (10/100/1000MB & 10GB), PCIe RC and EP, USB 3.0 Host and Device, CSIX and SPI
- **Memory and Storage:** SDCARD 4.0, DDR 4/3, LPDDR 4/3 and ONFI
- **MIPI:** DPHY, DSI, LPDDR, MPHY, SMBUS, RFFE and Unipro
- **Universal Serial I/O:** CAN, GPIO, I2C, UART, SPDIF, I2S, SMBUS, SPI and TDM

Independent Verification Service

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

Proven Implementations

Use asureVIP with the confidence of knowing that they have been successfully deployed by leading SoC companies around the world.

About TVS

Test and Verification Solutions Ltd (TVS) provides services and products to organisations developing complex products in the microelectronics and embedded software and systems industries.

TVS operates globally with offices in the UK, France, Germany, India, Singapore the USA plus a network of international partners.

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