

AMBA-Xactor Test Environment

Your Solution to AMBA AXI/AHB Compliance Validation



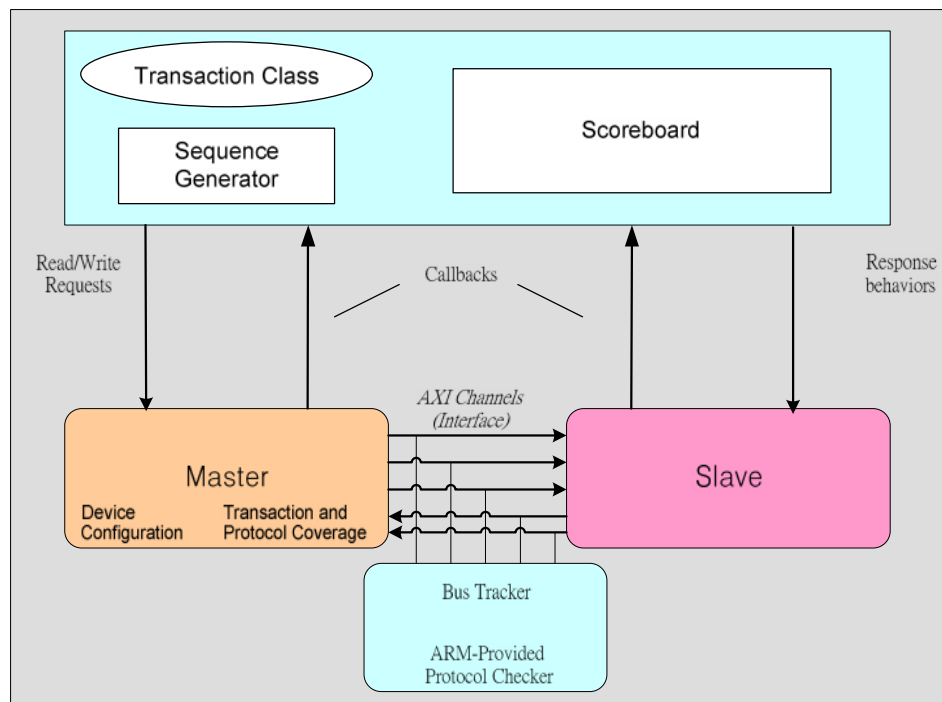
HIGHLIGHTS

- Supports master, slave, and interconnect topologies of all bus widths
- Supports AMBA AXI3, AXI4, and AHB 2.0 standards
- Supports SystemVerilog VMM and OVM
- Transaction class includes comprehensive constraint set for random verification methodologies
- Supports wide range of callbacks for convenient error injection and scoreboarding checks
- Supports bus monitor and transaction tracker file generation
- Works directly with the ARM AMBA 3 Protocol Checker r0p1 release for comprehensive assertion-based verification
- Includes examples tests for all types of transactions

OVERVIEW

The AMBA-Xactor supports verification of AMBA-based designs using the AXI3/4 and AHB 2.0 standards. AMBA-Xactor allows users to verify their designs by developing directed and constrained random custom tests.

- Master, Slave, and Interconnect models
- Slave supports simple memory and FIFO models for automatic response generation
- Supports random wait states on address, data, and response channels including programmable response behavior using request matching
- Supports user-defined slave response queues
- Supports data interleaving and multiple outstanding requests
- Supports out of order response
- Supports exclusive access and locked transactions
- Master supports read-verify operation



SYSTEMVERILOG ENVIRONMENT

AMBA-Xactor supports an object oriented SystemVerilog testbench comprised of

- Layered environment based on family of SystemVerilog classes and methods
- Abstract data model for transfer types and memory models
- Drivers, event callbacks, and scoreboard options to automate status and result checking
- Directed and random error injection supported through callbacks at various layers
- Random scenario generation with constraints stress design operation
- Directed tests for focused functional compliance testing
- Functional coverage monitoring of scenario cases
- Comprehensive protocol checking
- VMM/OVM support

PROTOCOL CHECKING

AMBA-Xactor supports comprehensive protocol checking of the AMBA 3.0 standard. The AMBA-Xactor interfaces with the ARM AMBA 3 Protocol Checker r0p1 release available from ARM and provides supplemental protocol checks for many system-level assertions.

BUS TRACKER

Debug is made easier through a transaction-level bus traffic tracker report which shows the information being passed on the write, read, and response channels.

```
AMBA AXI bus monitor "tracker2.txt".
#####
      Addr. Write      Data Write      Write Resp.      Addr. Read      Data Read
      Channel          Channel          Channel          Channel          Channel
      -----          -----          -----          -----          -----
      . *              ID/Data              ID/Resp.          . *              ID/Data/Resp.
      =====          =====          =====          =====          =====
125  AWID: 00h          WID: 00h/67666564h( 3: 0)
      ADDR: 90000000h
      AWLEN: 7h
      AWSIZE: 2h
      AWBURST: 0h
      AWLOCK: 0h
      AWCACHE: 0h
      AWPROT: 0h
      -----          -----          -----          -----          -----
```

TEST SUITE

A test suite is provided to illustrate the major features of using AMBA-Xactor and speed the learning curve on advanced features such as error injection and interleaving.

PLATFORM SUPPORT

Solaris, Linux, Windows

SIMULATOR SUPPORT

Cadence	NC-SIM
Synopsys	VCS
Mentor	Questa

LOCATIONS AND FACILITIES

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