AMBA- AXI UVM ALGORITHM FOR DRIVER VERIFICATION

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Abstract:

Progressed Extensible Interface (AXI) is the most usually utilized transport conventions in the everyday in light of its elite and high-recurrence activity without utilizing complex scaffolds. AXI is additionally in reverse perfect with existing AHB and APB interfaces. So confirmation of driver rationale utilizing AMBA-AXI UVM is displayed in this paper. The AXI is utilized for numerous exceptional activities which is just conceivable in the other convention yet it is conceivable in AXI in light of the fact that it contains diverse compose address and information channels and AXI likewise supports out of request move dependent on the exchange ID which is created toward the beginning of the exchange . The driver rationale for the AXI has been planned and actualized utilizing the Universal Verification Methodology (UVM).The motioning of the five channels, for example, compose address, compose information, compose reaction, read address, read information channel of AXI convention are considered for confirmation. As indicated by the AXI protocol, the sign of these channels are headed to the interconnect and results are watched for single ace and single slave. The driver rationale has been executed and checked effectively as per AXI convention utilizing the Rivera Pro. The outcomes watched for single ace and single slave have demonstrated the accuracy of AMBA-AXI plan in Verilog.

KEYWORDS: AMBA (Advance Microcontroller Bus Architecture),AXI(Advanced Extensible Interface),UVM(Universal Verification Methodology),channel.

INTRODUCTION

AXI represents (Advanced Extensible Interface) and it is an On-Chip correspondence convention. It is a piece of the Advanced Microcontroller Bus Architecture (AMBA) created by ARM (Advanced RISC Machines) organization. It gives high-recurrence activity without utilizing complex scaffolds to meet the interface prerequisites of a wide scope of parts. It is reasonable for memory controllers with high introductory access dormancy. AXI-UVM has separate location/control and information stages. It underpins for unaligned information moves utilizing byte strobes as opposed to supporting burst based exchanges with just begin address issued. Likewise underpins different remarkable locations without request reaction. On account of these highlights, AXI is the most regularly utilized on chip transport conventions in the everyday elite System On Chip (SOC's). In reference on AMBA AXI convention detail, the flagging data and handshaking sign and working of convention from AMBA-AXI convention has been reported. Gayathri M, and RSA have announced, a proficient SV-UVM structure for the confirmation of Serial Gigabit Media Independent Interface (SGMII) IP center, a solitary path 1.25 Gbps information rate interface between

Ethernet Media Access Control (MAC) and Physical (PRY) layer[1]–[3]. Rini Sebastian ,SGA covered advantages related with Assertion Based Verification (ABV) which was effectively connected to numerous degrees of plan reflection . All recreations were completed in NC sim and waveforms were investigated in Simvision. Every one of the declarations did were guaranteed without a disappointment and demonstrated the inclusion Independent Interface (SGMII) IIP for an AMBA-AXI Protocol condition post box are utilized of the inclusion driven verificaMahendra.B.M,Ramachandra.A.Protocol have checked the varioorder exchanges and they are HariVenkatesh, Venkanna, Desi for SOC Integration have present and contains different components test system[4]–[7]. Test square is a top level square in UVM. It has two purposes initial one is to make the earth square and after that to associate the sequencer to the arrangement.

SYSTEM MODELLING

Condition comprise of the five squares. Ace operator Slave specialist Scoreboard Inclusion Virtual sequencer. The earth is top most UVM confirmation condition.

MASTER AGENT

Ace operator holds drivers, sequencer and monitors. Sequences connote the contribution to the DUT, for example, guidelines, organizing parcels and transport exchanges.

SLAVE AGENT

Slave specialist holds drivers, sequencer and screens. Screens, sequencers and drivers can be utilized freely[8]–[11].

SCOREBOARD

Scoreboard is worked to check the reaction from the DUT against the normal reaction. It is finished by contrasting them with the Reference Model.

COVERAGE

Practical inclusion is the assurance of how much usefulness of the structure has been practiced by the confirmation condition.

VIRTUAL SEQUENCER

The virtual sequencer has the handles of physical sequencers which are indicated physical sequencers in the earth[1]–[3].

CONCLUSION

In this paper the driver rationale has been actualized and checked effectively as indicated by the convention utilizing the Rivera Pro and results are watched for single ace and single slave. The outcomes have demonstrated the accuracy of AMBA-AXI convention. Testing the plan utilizing inclusion as execution parameter and making it cacheable and buffer able are the future extensions this actualized structure on AMBA AXI. This structure can be utilized to execute the screen rationale in which the sign driven by the directs can be gathered in the screen rationale and can be contrasted in the scoreboard all together with guarantee the

information driven and gathered are actually the equivalent. The axis can be utilized to watch the out of request exchanges and out of burst exchanges.

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