AMBA BASED AHB2APB BRIDGE RTL DESIGN IN VERILOG AND VERIFICATION IN SYSTEM VERILOG

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in

VLSI Design And Embedded System

by

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

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ABSTRACT

The Advanced Microcontroller Bus Architecture (AMBA) is an open System-on-Chip bus protocol for high performance buses to communicate with low-power devices. The AMBA AHB is for high-performance, high clock frequency system modules. In the AMBA Advanced High Performance bus (AHB) is used to connect a processor, a DSP, and high-performance memory controllers. The AMBA APB is optimized for low power consumption and interface reduced complexity to support peripheral functions. It also contains a Bridge, which connects the AHB and APB buses. Bridges are standard bus-to-bus interfaces that allow IPs connected to different buses to communicate with each other in a standardized way. So AHB2APB bridge is designed, implemented using VERILOG tool and tested using Verilog testbench by simulating it in XILINX ISE. Also, we verify the all functions and specification of Bridge protocol by writing verification code using Universal Verification Methodology(UVM). The code coverage and functional coverage and functional verification of the Bridge RTL design will get 100 percent covered by QUESTASIM.