Data Sheet

Beyond Debug Interface Controller

Introduction

The Beyond Debug Interface Controller is connected on one side to the IEEE 1149.1-2001 Beyond TAP Controller as External scan chain Debug Interface register and on the other side to the Debug Unit of Beyond BA processor(s) and/or Beyond peripheral interface cores. It synchronizes signals from all clock domains, while decoding Debug Interface instructions and translating data between serial and parallel interfaces.

For information on various licensing options or other IP cores please contact sales@beyondsemi.com or visit our website at http://www.beyondsemi.com. Some features may be omitted in this datasheet or might be shortly available. If you require something not listed here or if in doubt we encourage you that you contact our sales department at sales@beyondsemi.com.

Features

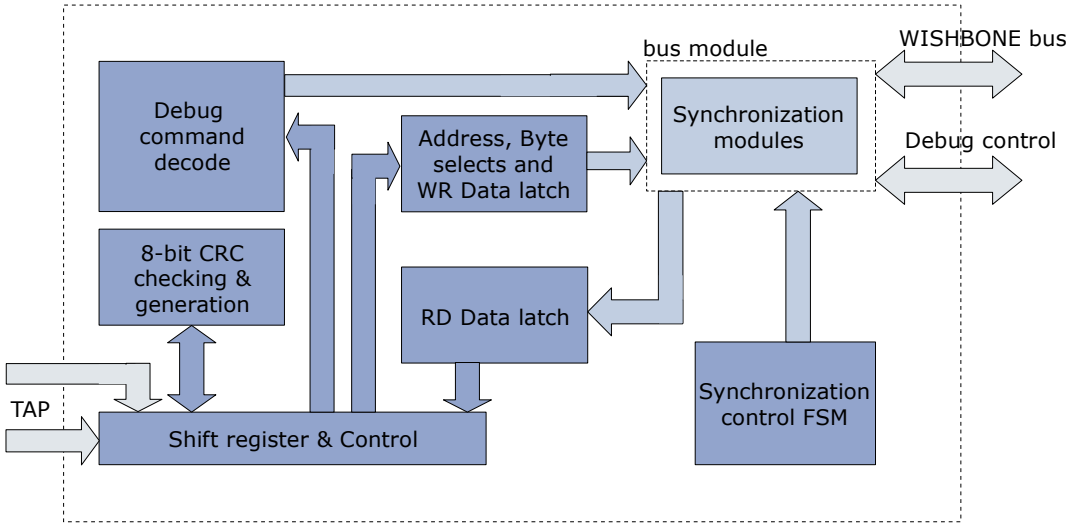
- 80-bit serial scan chain register interface to the IEEE 1149.1-2001 Beyond TAP Controller
- 8-bit CRC generation and checking
- Up to 16 BUS modules (parallel interfaces) selected with define
- Each BUS module has:
  - Multiport AHB or WISHBONE SoC Interface Rev. B3 compliant
  - Optional control signals for Debug Unit of Beyond BA processors
- Each BUS module can be connected to the Debug Unit of Beyond BA processor(s) or to Beyond peripheral interface cores
- Each BUS module can operate on different clock domain
- Full clock domain crossing synchronization
- Synchronization is built to prevent deadlock if/when any one of parallel interfaces goes to reset state or it's clock stops running

beyond SEMICONDUCTOR

Architecture

Figure bellow shows the general architecture of the Beyond Debug Interface IP core. It consists of following building blocks:

- Shift register and control for serial scan chain
- 8-bit CRC check and generation
- Debug command decode
- Write latch registers
- Read latch registers
- Synchronization control FSM
- Synchronization module
- Bus module



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Easy and Quick Start

Deliverables

- Full Verilog RTL source
- Extensive Test Bench
- Documentation
- Linux Driver
- Free Engineering support

Target Applications

- Software uploading and debugging with the IEEE 1149.1-2001 Beyond TAP Controller
- Beyond peripheral interface cores initialization with the IEEE 1149.1-2001 Beyond TAP Controller