June 11, 1998

Conceptual View Of P1500
A Scalable Core Test Architecture
P1500 Scalable Core Test Architecture Subcommittee

"Model Of How We Are Operating"

Development Without Considering Use of JTAG TAP

Serial Test Mechanism

Evaluate New Proposals

Parallel Test Mechanism

Learn New Things

Begin

End

Test Architecture for non-TAP'ed cores/ICs

Compatibility

Continued Development Considering Use of JTAG TAP

Serial Test Mechanism

Evaluate New Proposals

Parallel Test Mechanism

Learn New Things

Begin

End

Test Architecture for TAP'ed cores/ICs

Other Development (i.e. Mixed Signal Core Testing)

Begin

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P1500 Core Test Collar Supporting Both Serial and Parallel Test Mechanisms

Core Test Collar Modes:
- All Previous Serial Test Mechanism Modes
- Parallel Data Input and Output
- Parallel Control Input
- Supports Parallel Scan Testing
Serial Test Mechanism provides serial access & control to MCSP & collars
Scanning MCSP provides test mode input to collars
Scanning collars provides testing according to test mode input.
Core Test Collar Modes:
- Core Internal Test (Scan Mode)
- Functional Mode (JTAG Bypass)
- Interconnect Test Mode (JTAG Extest)
- I/O Preload Mode (JTAG Sample/Preload)
- I/O Isolation & Bypass Mode (JTAG Clamp/HighZ)
- I/O Isolation & Core Bist Mode (JTAG RunBist)
Conceptual View of an Expanded P1500 Scalable Core Test Architecture

Parallel Test Mechanism provides parallel access & control to cores
Parallel Test Mechanism enable by PTMENA from Serial Test Mechanism
Parallel Test Mechanism Example
Using A Bi-directional "Test Bus" Style Fabric

"Test Bus" Fabric

Test Bus style fabric permits direct connection to core I/O
Parallel Test Mechanism Example
Using A Uni-directional "Test Rail" Style Fabric

"Test Rail" Fabric

Test Rail style fabric permits registered connection to core I/O
P1500 Core Test Collar Supporting Both Serial and Parallel Test Mechanisms

Parallel Test Mechanism

- PDI
- PCI
- PDO

Serial Test Mechanism

- SDI
- SCI
- SDO

Core Test Collar Modes:
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