

Date – 03/01/2011

Attendees: Bill Tuthill, Brian Turmelle, Carl Barnhart, Dave Dubberke, Craig Stephan, Ken Parker, Roland Latvala, Ted Cleggett, Adam Cron, Wim Driessen, Bill Eklow,

Missing with pre-excuse Adam Ley, Mike Richetti, Francisco Russi, Carol Pyron, Heiko Ehrenberg, CJ Clark,

Missing: Lee Whetsel, Neil Jacobson, John Braden, Ted Eaton

Agenda:

Meeting Called to order at 11:05 am EST

Minutes:

New individual joined the meeting. Ted Cleggett from Striker Electronics. Had attended today's meeting to do some research on in circuit test.

Review Patent Slide

Review of Clause 3 Definition and Acronyms

Carl raises issue with Definition of NO Connect

No Connect should be at least No Connection.. BSDL key word and would like to remove it.

Bill E- No Connect refers to a potential connection to a pin on the device at the board level.

Ken had noted that earlier and decided to limit the definition to the package.

Bill E – is there a location to describe scenario on board

Carl – no this is chip standard and does not cover what is at the board level

Adam C – different definitions need to keep it

Carl Moves to adopt Clause 3 changes into the draft as a base and does not preclude changing it later

Ken Seconds

NO objections to the adoption.

Motion passes

Carl is accepting the changes in clause 3

Clause 4 – Test Access Port

Changed wording on TMS

TDI added CMOS technology.

Added note about legal states. Added note about transition from Z to 1 and Z to 0

TRST* strengthened the wording to indicate that this is used at Power Up and not as a general RESET

Added Test Mode Persistence wording to TRST

Modified Pull UP rule for TRST*. Clarified that it needs to be pulled up during compliance enabled.

Bill E – pull downs at the board level. Believe that the pull ups are in the chip as well. Will need to verify

Carl will leave rule for on chip pull up

Figure 4-5 is all new.. shows board level TRST* pull down/board level POR TRST*

Figure 4-6 Examples of incorrect board level implementations

Ken questions how to detect an open on TRST*

Dave – why not a pull down on TRST*. Do you want it to be test operational or functional operational?

Carl – which is easier to detect - a TRST* that is pulled up or a TRST* that is pulled down. Carl would like to continue this discussion in Email to continue with discussion

Compliance enable

Description that you can change the compliance enable pattern in the middle of testing as long as you don't create a glitch

Carl Moves to adopt Clause 4 changes to date into the draft as a base and does not preclude changing it later

Ken Seconds

No objections

Motion passed

Carl is accepting the changes in clause 4

Clause 5

Add Test Mode Persistence

Clamp Mode Persistence controller is shown in Figure 5-1

Roland notices that Clamp Mode Persistence should be changed to Test Mode Persistence

Ken asks if you should add the word “optional” to Test Mode Persistence controller to make it is known that it is optional

Carl Moves to adopt Clause 5 changes to date into the draft as a base and does not preclude changing it later

Ken Seconds

No objections

Motion passed

Carl will make changes to figure 5.1 that were just mentioned

Carl is accepting the changes in clause 5

Clause 6

Test Logic Controllers Section

Tap Controller section

Test Mode Persistence Controller

Test Logic Reset Description

Entering the state says nothing about the system logic and this state has no direct effect on system logic.

Strengthen Ken's the idea of the Test Mode Persistence need for a lobotomized state

Temporary Controller state- nothing to do with new changes we are adding. . Every state that you can't stay in is a Temporary State. Modified descriptions to explain this and make consistent through clause

Table 6-1

Needs Discussion

Not voting on whether content of Table is correct or not

Bill E – option to just run traditional 1149.1? Not mandated to put all test reset persistence control into chip?

Carl – yes. Don't have to be compliant to 2011 and yes still optional

Tap Controller Operation

Ken's timing diagrams were added

New Schematic Diagrams using modern symbols

Figure 6.7 Operation of the Example TAP Controller. Dump of logic analyzer

Never referenced anywhere in text

Carl would like to get rid of it?

Ken thinks it is from the late eighties as proof that the tap works.

CJ doesn't think it should be removed at this time. Not enough members

Carl will leave it there for now

Figure 6-5 Tap Controller Implementation

Might need a state based diagram

Pick up discussion with 6.2 – Test Mode Persistence Controller at next meeting

Please continue to review offline and through email

Meeting adjourned: 12:01 EST.

Next Meeting: 3/8/2011 11:00 AM EST

Motions Made and Seconded

- To Accept changes made in clause 3 with provisions to change if necessary in future
 - Passed
- To Accept changes made in clause 4 with provisions to change if necessary in future
 - Passed
- To Accept changes made in clause 5 with provisions to change if necessary in future
 - Passed

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Current Issues listed and who will champion that issue.

1. Observe only. – Ken and Carl
1. Directionality linkage. - CJ
2. Power Pins. - Heiko
3. Pairing power pins with functional I/O - CJ
4. Sample / Capture. – Carol (Freescale) & Roland
5. TRST included in PCB level diagram. – Adam L.
6. Slow to Fall/Rise signaling issue – CJ
7. “No Connect” – Ken and Francisco.
8. Device ID – Still needs work
9. Low-Voltage self observe shorts coverage problem – JJ & Intel
10. Init – Carol & Carl

Action Items:

IEEE 1149.1- 2011 Boundary Scan Working Group Minutes

- CJ will post 1149.1 draft on website with line numbers to make it easier to refer to items in discussion
- Comment #10 CJ will take action to look at possibilities to add to the 1149.1WG website a document which shows which standards are based on 1149.1
- Comment #8 CJ will make changes to draft for observe only
- Comment #7 CJ will get in touch with Doug to get input regarding Comments
- Comment #5 CJ will Add a figure and little text to address TRST use with interconnection of components
- Comment #4 Adam L to add comment about TRST. Update figure 6.8
- Comment #3 Adam L will update language for any proposed change for this section.