

**IEEE P1394b CONNECTOR TASK GROUP
COPPERHEADS
Huntington Beach, CA**

February 9, 1999

Max Bassler – Chairman (Not Present)
Bill Northey – Secretary, Acting Chair
- Dave Brunker – Acting Secretary

AGENDA

Review and approval of last meetings minutes

New Items

- Presentations
 - S400-S800 Performance Evaluation Progress Report - Brunker
- New Business
- Review ongoing action items

Colin Whitby-Strevens reminded the group that the Plenary had discussed the need for a new connector. Dave Brunker asked for clarification. Response was that the Plenary may request B only operation. Colin indicated he will support discussion under New Business.

SUMMARY OF DECEMBER MINUTES

- S1600 cable presentation made by Bill Northey (Full presentation posted to web)
 - Bill Northey to provide test conditions and post presentation
 - Need Colin Whitby-Strevens and PHY WG input on following:
 - NEXT – 6.6% @ 100ps risetime acceptable?
 - Is –26dB needed? (spec calls for 5% now)
- Electrical requirements discussion for S800-1600, lead by Dave Brunker
 - Develop some worst case cables for attenuation and reflection
 - Present more on performance evaluation at next meeting
- Kyozo Saito updated his presentation on adding switches to the 6 ckt I/O
 - Saito san to post presentation for review

Minutes were approved

NEW ITEMS:

PRESENTATIONS

- **D.C. Sessions announced that draft documents from Design Comm are available for IBIS connector modeling**
- **S400-S800 Performance Evaluation Progress Report – Dave Brunker**

Dave made a presentation comparing some of the differences in the interconnect performances between S400 (1394.a) and S800 (1394.b). The presentation recognized the differences between .A & .B, based on evaluation of the two specifications. Dave indicated that in differential mode we could expect to see a 3-4X improvement over common mode signaling. He indicated that at 2000 MHz, it is impossible to meet the requirements of .B with existing cables. Furthermore, cable detect would be needed at S800. In the follow-up discussion it was suggested that the discrepancies between .A and .B could be resolved and perhaps S800 would be workable on existing cables.

ACTION: DAVE TO POST HIS PRESENTATION TO THE COPPERHEADS AREA OF THE 1394.B WEBSITE

ACTION: DAVE TO MAKE A PROPOSAL TO REVISE 1394.B ANNEX K TO IMPROVE METHODOLOGY AND ALIGN TEST PROCEDURES TO BE COMMON TO BOTH .A AND .B

NEW BUSINESS

• Discussion of possible alternative connector

- Dave Wooten, as a result of discussions at the December Plenary, requested consideration of a “non-A” compatible alternative copper connector (E-mail correspondence). Characteristics required include low cost, S400-S1600, fast (proposed design must be currently or quickly available). Additional criteria possibly to include: B only or 95/A could plug into Bilingual; B only can’t plug into 95/A; A only can’t plug into B.
- Eric Hannah suggested that a) the connector could be small, possibly shielded quads, and b) the shield metal could be recessed rather than protruding, avoiding the need for a capacitive gasket.
- Bill Northey showed two possible solutions with a backward plug compatible, and a non-backward plug compatible modifications of the existing 6-pin connector. The second version could allow for fixing the power pair positions to a better performing location. Other comments: size could be potentially reduced by going to a 4-pin version (eliminating the power pins); Keep the moving beam on the cable side to minimize the possibility of damage to the “high cost” side of the interface.

REVIEW ONGOING ACTION ITEMS

- EMI/RFI Baseline test method – No new action, consider dropping (HELD OVER PENDING ACTIONS BELOW)
 1. Presentation posted to web.
 2. Call for test method input and review of details
 3. New version posted on the web, reported by Mike Fogg that there was no IP involved with this technology
- ACTION: CHUCK BRILL WILL REVIEW POSITION OF TESTING AND CAPACITIVE GASKET. INCLUSION OF WORDING IN SPECIFICATION TO BE CONSIDERED. A PROPOSAL IS NEEDED HERE.
- ACTION: CHUCK BRILL TO REVIEW THE NEED FOR EMI/RFI BASELINE TEST METHOD IN VIEW OF NO NEED FOR GALVANIC ISOLATION BETWEEN CHASSIS.
- REFERENCE 5.1 IN 1394.B DOCUMENT 0.15
- JOHN LOPATA RAISED THE ISSUE THAT CABLE ID IS IDENTIFICATION AND NOT AN ACTIVE TEST.
- Cable detect pin in copper connector
 - Proposal under review
 - After much discussion (October meeting) it was concluded:
 1. S800 may not need a detect device (to be confirmed by additional testing)
 2. S1600 will need new cable/mod. Connector and detect device
 3. A study of the impact on pinout/ functionality of the connector/cable and PHY is needed
 - ACTION COMPLETED: Kyozo Saito has posted his updated presentation to the Copperheads area of the Web page
- Connector contact modifications

- Awaiting durability/reliability data
- RESPONSE: BILL NORTHEY INDICATED THAT THE FORMAL REPORT IS NOT IN BUT THAT INITIAL INDICATION IS THAT THE FCI/BERG MODIFIED CONNECTOR MEETS THE ELECTRO-MECHANICAL REQUIREMENTS OF IEEE 1394-1995
- ACTION: BILL NORTHEY TO BRING IN ELECTROMECHANICAL TEST RESULTS TO DOCUMENT AND VERIFY FITNESS OF ALTERNATIVE CONNECTOR DESIGN
- Revise electrical values of standard to agreed NEXT values
 - A formula could be adopted without setting 5% crosstalk limit
 - Signal detect upper limit - signal present
 - Signal detect lower limit - signal not present
 - ACTION: COLIN REQUEST 5% NEXT LIMIT