

**IEEE P1394b Connector Task Group**  
**"Copperheads"**  
**P1394b- Hawaii October 13,1998**

Max Bassler (Could not attend)  
Chairman  
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Bill Northey (Acting Chair)  
Secretary  
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**Agenda**

- Review and approve of last meeting's minutes
  - *Approved*
- Review of past presentations
  - Switched 1394 Header
    - Needed for S1600- 2 pins proposed
  - Geometry changes to contacts by BERG
    - New material
    - *Waiting for mechanical test report – Bill Northey*
  - EMI/RFI Testing
    - New version posted

New items

- Presentations
  - S1600 cable speed capability – Bill Northey
- Discussion on electrical requirements for S800-1600
- Develop Ongoing Action Items

**Summary of October Minutes**

- Proposal for bulk cable testing methodology passed
  - Forwarded to the secretary to put into Framemaker
  - Action Bill Northey to draft this section into Framemaker.
  - Complete- under review-copies at the meeting
  - Revised working proposed about equipment used
- Proposal made for cable detect pin in 6 ckt I/O using an inexpensive switch
  - Voted and reported to Plenary that a switched version will be
  - necessary
- Ongoing proposal to change shape/geometry of existing contacts in the socket
  - Follow-up presentation required on durability and reliability

- numbers- Pending for next meeting
- Chuck Brill to propose an EMI/RFI test for review
  - Information presented, details under review
  - Chuck to provide more legible copy for review
- Colin Witby- Strevens has requested that this group provide NEXT information for the 6 ckt I/O system. These are needed to understand total electrical budget. Requested is based on work done in Fibre Channel
  - Based on the draft electrical chapter today we propose the followings changes to meet the NEXT and total electrical budget for connectors and cables:
    - S800 - 200ps risetime (250ps for EMC concerns)
    - S1600 - 100ps (under review)
      - Based on -26Db crosstalk, Skew values in P1394b
      - Total Budget- 80 mv maximum launch (NEXT 40mv, noise 15mv, off transmitter 20mv, margin 5mv)

### Agenda for October

- Presentations planned:
  1. Update on modified electrical contact design
    - In testing for mechanical performance
  2. Continued discussion on electrical requirements for S800-1600
    - S1600 cable presentation summary by Bill Northey (Full presentation posted to web site separately)
      1. 6 cables tested @1600Mb/s (3 @4.5 meters, 3 short cables).
      2. Cables were commercially available and made by several manufacturers
      3. All but one cable supported S1600 speeds
      4. 100% cable testing would be required to find failed cables, at least until the manufacturing process were determined to be consistently good
      5. S800 speeds would certainly not be a problem with the tested cables
    - Question was raised regarding data run length. Bill Northey to determine and report
  3. Open discussion
    - D. Wooten questioned whether currently defined masks have enough margin to accommodate losses between TP-3 and TP-4. Response is out of scope, but if modified masks are provided, we could accommodate. D. Wooten to question editor on this point
    - Each signaling rate should reflect a specification level consistent with its' respective performance level (cost issue)
    - Discussion regarding switches in 6-pin connector
      - Connector presence switch NOT needed on 6-pin connector, but is necessary in optical interface (6-pin copper connector can support DC presence test)

- Cable ID requirement unconfirmed @ S800; confirmed @ S1600. Further empirical/theoretical evaluation required for S800 – Action : Northey/Brunker. Dave B. volunteered to consider the many variables that could be adjusted to make a cable that barely meets the 1394-95 performance requirements. Bill N. indicated that he would be willing to test this cable on the test connectors used to gather data for his presentation today.
- Colin Whitby-Stevens indicated his feeling that S400 cables probably perform at S800 because of the move from common mode to differential, DC balanced signaling and 8B-10B coding.

### **Ongoing Action Items**

- EMI/RFI Baseline test method
  1. Presentation posted on web.
  2. Call for test method input and review of details.
  3. New version posted on the web, reported by Mike Fogg that there is no IP involved with this technology
- Cable detect pin in copper connector
  - Proposal under review
  - After much discussion it was concluded:
  - S800 may not need a detect device (to be confirm by additional testing)
  - S1600 will need new cable/mod. connector + detect device
  - Impact to pinout/function of connector/cable + PHY
- Bulk cable specification methodology
  - Passed- To be added to P1394b document
  - Document in Framemaker and under review
  - Complete and given to editor
- Matrix of physical interfaces
  - Updated from last meeting
  - Post next meeting
- Connector contact design modifications
  - Awaiting durability/reliability data
  - Additional data to be presented in Hawaii