

**IEEE P1394b CONNECTOR TASK GROUP
COPPERHEADS
San Jose, CA
April 28, 1999**

Max Bassler – Chairman
Bill Northey – Secretary

AGENDA

Review and approval of last meetings minutes

New Items

- Discussion of Different PHY to connector needs
 - Presentation of grounding methods for Beta interface
 - Discussion of alternative contact design 1394-95/A interface
 - Review ongoing action items
 - New Business
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FEBRUARY MINUTES

Max handed out copies of the minutes from the March 22, Tempe, AZ meeting
Minutes were reviewed.

Max moved to accept the minutes

John Hill seconded

11 voted to accept, 4 abstained

- Max Bassler and Dave Wooten presented a matrix for Media Speeds and Connectors. The original chart was amended to go to S3200, and to break POF into two categories, HPCF and POF. Beta and Bilingual interconnects would be keyed to exclude plugging legacy and Beta systems together. Beta could plug to Bilingual, and conversion from legacy to bilingual would be handled in cables. Max will fill in the chart after the plenary and distribute. John Hill indicated concern that the chart is somewhat preliminary since the Plenary had not listed detailed connector requirements and their associated speeds. John also discussed the need for better clarification to the requirements for the various media used in 1394 transmissions.
- Dave Brunner presented information regarding three possible levels of grounding in Beta systems. He was looking for explicit direction on the ground method. Eric Hannah suggested having a plastic shield around the cable and/or connector shield to prevent the user from touching the two grounds that could possibly be at different potentials.
Daves' three ground methods were as follows:
 - Ground Scheme Alternative #1
Minimum Isolation system:
 - Shield tied to Frame Ground
 - Signal returns commoned with power ground and isolated from shield
 - Ground Scheme Alternative #2
Frame to Frame Galvanic Contact
 - Shield tied to Frame ground
 - Signal returns isolated from power ground and fully dedicated to Rx input
 - Ground Scheme Alternative #3

Full System isolation:

-Shield isolated from Ground

-Signal returns isolated from power ground and fully dedicated to Rx input

A general consensus was expressed that we have no definite need for galvanic isolation but that a shock shield should be implemented. Also group consensus favored isolating signal returns from power ground.

- Colin Whitby-Strevens made a presentation about Jitter based on his experience with the Fibre Channel community. Colin presented his spreadsheet (available on the web site) and explained how he developed it. The spreadsheet covers random, deterministic, and total jitter. He asked the Copperheads and fiber optic groups to review the data and accept or negotiate.
- Bill Northey presented his proposal for allowing an alternative contact design for the existing 6-pin PC board receptacle. He gave an overview of the wording change in 4.2.1.1 Section of 1394-95. All changes being proposed are backward plug compatible to 1394-95, 6 circuit connector. Are there any IP issues of this designed was asked by John Hill, the answer was NO. For clarification the intent was that this work be added as an alternative to 1394-95. A question was raised about the alternative contact design and the crosstalk tests found in Annex K.8 of 1394-95; and B.4 of 1394a. Bill will investigate and report back.
- John Lopata expressed his concern about the changes proposed by Bill Northey. He identified that a new section D-D and E-E in figure 4-7. He also suggested some rewording and relocating the wording in the standard. Bill agreed to review this.
- Max Bassler made an updated presentation regarding a Beta only connector proposal. He handed out copies, and will post the proposal to the web site. John Hill suggested that before we proceed in any designs, we request a coherent set of requirements from the Plenary. He asked that a matrix be generated showing connector type, speed, cross talk (NEXT, FEXT), jitter (some data up to S1600, need effect down to S400), impedance at the connector, rise time, skew, rise time degradation, duration of the exception window and any other requirements. It could also be beneficial to establish time domain requirements that would help with practical evaluation of cables.

OPEN ACTION ITEMS:

- **EMI/RFI TEST METHOD – Chuck Brill to report in April -- Having no report, we are dropping this issue**
- **CABLE DETECT PIN FOR ENHANCED 6 CKT I/O – Open pending Plenary vote on March 23 for s800 – The plenary voted to drop this need, therefore issue dropped**
- **ENHANCED 6 CKT I/O – Bill Northey – Information posted. Presentation made today. More data required ref. Annex K of 1394-1995, and adjustments to wording and drawings**
- **REVISE NEXT VALUES IN THE DRAFT**
 - Colin to revise
 - Recommend 6 ckt enhanced NRXT to be 5% @ 250ps risetime (20% to 80%)
- **BETA ONLY CONNECTOR PROPOSAL – Max Bassler**
 - Post to web for review and comment
- **Verify S800 operation w/cable & enhanced 6 ckt – Dave Bruner**

No other new business

Meeting closed