

**Notes of the:
P1394b Ballot Review Committee Meeting
September 20-22, 2000**

IEEE P1394b Ballot Review Committee Members: David Wooten – Cypress Semiconductor (Chair); Colin Whitby-Strevens - Zayante, Inc.; Dave Thompson - Lucent Microelectronics; Eric Hannah - Intel; Jerry Hauck - Zayante, Inc.; Jim Skidmore - Texas Instruments; Max Bassler - Molex; Mike Teener - Zayante, Inc.; Peter Johansson - Congruent Software; Sean Killeen - SSL; Steve Bard - Intel; Victoria Teng – NEC

This is attendance on day one: David Wooten (Chair), Colin Whitby-Strevens, Michael Shinkarovsky, Jerry Hauck, Victoria Teng, Eric Hannah, Steve Bard, Max Bassler.

Special invited guests in attendance: Susumu Morikura (National/Panasonic – Matsushita Electric Industrial Co., Ltd.); Kazuki Nakamura (Mitsubishi Rayon Co., Ltd.); Kazuki Sogabe (Sumitomo Electric Industries, LTD.)

The group nearly came together around 9:00 AM and was divided into two groups. The first group (consisting of Colin Whitby-Strevens, Jerry HMichael Shinkarovsky) relocated to the La Jolla room and began a PHY-DOGs working session). The second group (consisting of those folks remaining) began a discussion of HPCF and POF.

A point was clarified: HPCF is GLASS OPTICAL fiber and, therefore, any discussion of HPCF does not belong in the Plastic Optical fiber chapter of the draft standard.

A presentation (developed by the invited guests) developed into a lively discussion of optical implementation in the 1394b draft standard. **At least a couple of problems were identified (and others probably exist): POF and HPCF (as documented in the 1.01 draft standard) use the same plug and socket. This will result in a bad user experience when: 1) a POF cable is plugged between two PHY's interfaced to an HPCF transceiver (cable of S400) and speed negotiation is successful for S400 but when transaction begin, failure occurs (POF is not capable of S400); 2) when a POF cable and HPCF are mated by an in-line connector between a pair of transceivers, coupling loss between these two fibers is significant - the difference in diameter between the two types of fiber coupled with the adapter results in a power loss from one fiber to the other sufficient to prevent either receiver from detecting a reliable signal – such a connection will cause communication failure.**

NOTE: Both POF and HPCF have an upper speed limit of S200.

AR: Max Bassler find connector reference drawings for LC connector for use in the GOF chapter.

Comments on deletion of HPCF part from p1394b specification:

- Both POF and HPCF are categorized as large core diameter, easy connection optical media
- Both SI-POF and GI-HPCF have been specified in p1394b to transmit S100 & S200 for a long distance
- Both SI-POF and GI-HPCF are now on market and are supported by a lot of users.

- Additionally, 1394 business based on GI-HPCF will be started from tomorrow
- GI-HPCF should remain in the 1394b standard
- We [the invited guests] support to review the 1394 standard, especially section 8, if it is possible

GI-HPCF is approximately 3x the price of SI-POF. The nature of the technology requires that the transceiver and the cable socket be tightly coupled. This is why a transceiver that supports both SI-POF and GI-HPCF will result in a bad user experience – SI-POF will not function at S400.

AR: Kazuki Nakamura (Mitsubishi): In the POF Chapter, table 8-2/8-3, etc. will be modified to add a column. There will be a column for POF S100 and POF S200. Create just one table (not two tables).

The current 1394b draft specification (revision 1.03), table 8-2 (POF at S100) list Maximum Systematic Interface Jitter to be 1.6 ns and Maximum Random Interface Jitter to be 0.6 ns. The table does not call out where the jitter budget is divided among the transceiver transmitter, media and transceiver receiver (TP1, TP2 and TP3). Similarly, table 8-3 (POF at S200) list Maximum Systematic Interface Jitter to be 0.8 ns and Maximum Random Interface Jitter to be 0.3 ns. Again, the table does not call out where the jitter budget is divided among the transceiver transmitter, media and transceiver receiver (TP1, TP2 and TP3).

AR: Kazuki Nakamura (Mitsubishi): The POF chapter must delineate where the jitter budget is allocated between TP1, TP2, TP3 and TP4.

AR: Kazuki Nakamura (Mitsubishi) estimates that a draft of a corrected POF chapter and material for an HPCF chapter (including an HPCF connector that is NOT able to be mated with the POF connector that has industry support) could be available by the next BRC meeting (four to five weeks out). NOTE: This is a target (goal) deliverable date and must not be construed as completion date. Suffice it to say that whatever work has been completed by the next BRC will be presented at the next meeting.

The next BRC meeting will be held October 25th and 26th, 2000 and will be co-located with the 1394 Trade Association (Max Bassler to take care the meeting logistics with the Trade Association).

AR: Steve Bard to e-mail a request to Mike Teener to add Nakamura-San, Morikura-San and Sogabe-San to the 1394b editors' reflector.

The IEEE p1394b draft standard will not undertake any effort to standardize single strand plastic optical fiber implementations of 1394b.

Day One meeting dismissed at 5:00 PM.

Meeting reconvened at 9:00 AM, Friday, 22nd September.

Those present: David Wooten, Colin Whitby-Strevens, Michael Shinkarovsky, Victoria Teng, Eric Hannah, and Steve Bard.

Discussion opened with a proposal to resolve disable of a port in standby (whether an Uncle or Nephew). The proposal is that disabling a port in standby causing that port to go to hard disable – a logical disconnect. This would cause toning from the port being disabled to discontinue. The proposal is broken if the disabled port is left in hard disable because if the PHY is a Naked PHY, there is now way to clear the hard disable bit. A modification of the proposal was to execute a

behavior like unto a hard disable but not use the hard disable flag. Essentially, enter a condition in which the port not being disabled no longer seems connect toning and enters into a disconnected state, at which time the port being disabled starts up connect toning once more but is in a soft disabled state (two times disconnect tone-time). The port connected to the soft disabled port concludes its process and ends up in a connected loop-disabled state.

AR: Mike Teener is to place into the descriptive text of the state machine table, a requirement that the negotiated speed for a beta port shall be set no later than when it is set for a 1394a port.

AR: David Wooten to make updates to the serial PHY/Link section in the draft spec to incorporate the procedure used for a PIL and a FOP to establish a serial PHY/Link interface. This process takes place during speed negotiation and just prior to training. Two bits of the three reserved are used in the establishing a PIL/FOP serial PHY/Link relationship. The PIL sets one of the bits while a FOP sets the other bit. The PIL looks for a set FOP bit and the FOP looks for a set PIL bit. When this scenario occurs, a serial PHY/Link interface is established. If, however, the PIL sees a PIL bit set instead of a FOP bit set, the connection will result in two separate nodes with a beta connection between them.

AR: David Wooten to contact John Fuller and inquire as to where did John obtain the value for config timeout he submitted with his ballot comment.

IEEE P1394b Ballot Review Committee Chapter Owners:

CHAPTER	TITLE	OWNER
	Introduction	
1	Overview	EH
2	References	EH
3	Definitions and abbreviations	DW
4	Summary description	MJT
5	Copper physical medium dependent cable media attachment	MB
6	Short-Haul copper physical medium dependent electrical specification	EH
7	Glass optical fiber physical medium dependent specification	MS/DT
8	Plastic optical fiber physical medium dependent specification	DT
9	Category 5 UTP physical medium dependent specification	DT
10	Beta mode port specification	CWS, JH
11	Connection management	CWS, JH, SB
12	B PHY-link Interface (parallel)	DT, VT
13	PIL-FOP Serial Interface	DW, SB, VT
14	PHY register map	CWS
15	Data routing, arbitration and control	CWS, JH, MJT
16	C code	CWS, JH, MJT
Annex A	Annex K supplement - bulk cable specification	MB
Annex B	Jitter measurements	CWS

MB = Max Bassler

MS = Michael Shinkarovsky

CWS = Colin Whitby-Strevens

JH = Jerry Hauck

MJT = Mike Johas Teener

DW = David Wooten

DT = David Thompson

SB = Steve Bard (Steve has offered to help with specific portions of these chapters)

VT = Victoria Teng (Victoria has offered to help with specific portions of these chapters)

IEEE P1394b Ballot Review Committee Meeting (September 21-22, 2000):

Name	Company	Email	Phone	21 st	22 nd	
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2 Bassler, Max	Molex			✓		
3 Hannah, Eric	Intel	eric.hannah@intel.com	408-765-4441	✓	✓	
4 Hauck, Jerry	Zayante, Inc.	jhauck@zayante.com	510-668-1006	✓		
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10 Thompson, David	Lucent Microelectronics					
11 Whitby-Stevens, Colin	Zayante, Inc.			✓	✓	
12 Wooten, David	Compaq	wd@cypress.com		✓	✓	

Not Present: Mike Teener - Zayante; Sean Killeen – SSL; Jim Skidmore – Texas Instruments; Peter Johansson - Congruent Software

Adjournment – 1:30 PM

Notes were updated 9/25/00 to: 1) add e-mail address in attendance table list for Sogabe-San; 2) correct the text (in this color) one page one.

