

## 1394 SCAT Meeting

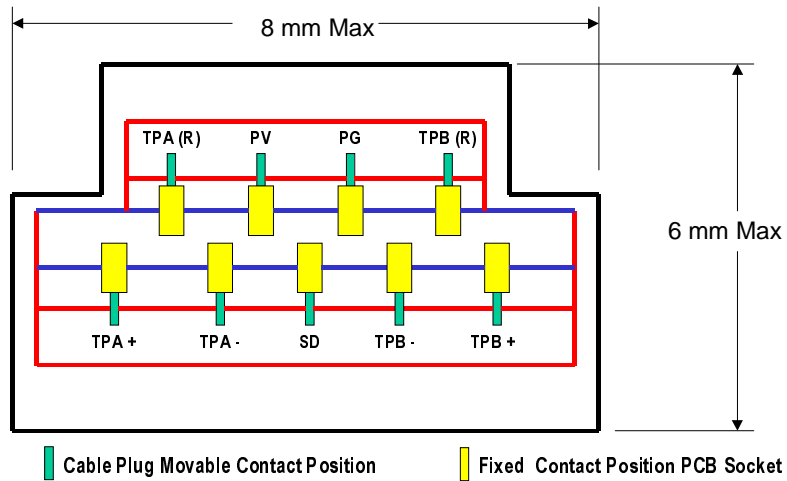
April 28 & 30, 1999

Max Bassler reported of the existence of a group within Copperheads which would prefer to use a modified (keyed) version of the 6-pin connector for use as a bilingual connector. The following table and figures were shared by Max (the Secretary thanks Max for providing soft copies of the figures for inclusion in these minutes):

**Table 4/28/99 - 1**

| CONNECTOR             | Media Speeds |       |       |       |              |               |
|-----------------------|--------------|-------|-------|-------|--------------|---------------|
|                       | S100 to S400 | S100β | S200β | S400β | S800β (only) | S1600β (only) |
| 6 Pin 1394-1995       | Yes          |       |       |       |              |               |
| 4 Pin 1394a           | Yes          |       |       |       |              |               |
| Beta Bilingual        |              |       |       |       |              |               |
| Beta Only             |              |       |       |       |              |               |
| CAT 5                 |              |       |       |       |              |               |
| Plastic Optical Fiber |              |       |       |       |              |               |
| Glass Optical Fiber   |              |       |       |       |              |               |

### 1394 Beta Connector Proposal



**Figure 4/28/99-1**

1394 Connector Proposal Speed Detect (SD in figure 4/28/99-1) Pin Application:

- S800 – Open connection to Speed Detect Pin
- S1600 – Speed Detect Pin connected to Power Ground
- S3200 – Speed Detect Pin connected to Power Voltage

### 1394 Bilingual Beta Connector

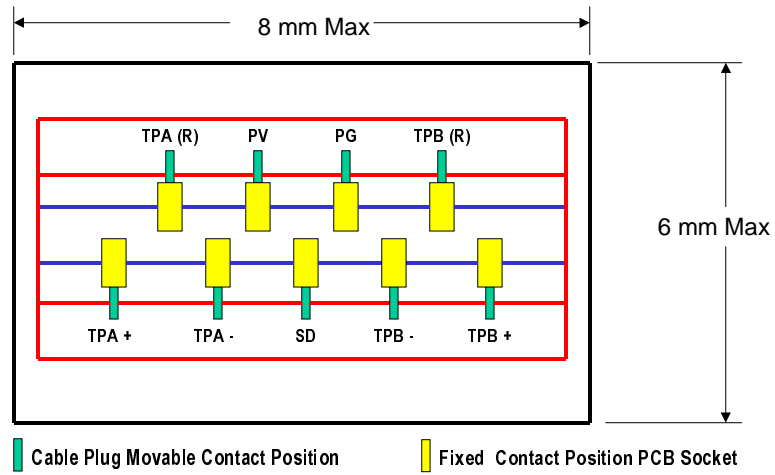


Figure 4/28/99 - 2

The plug/socket combinations result in:

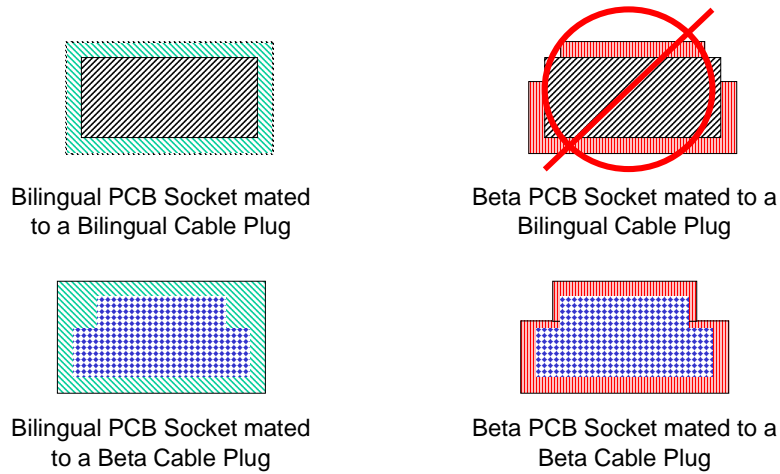


Figure 4/28/99 - 3

Max requested a time be reserved from SCAT meeting for joint attendance at Copperheads. SCAT folks will attend the first part of Copperheads at 1:00 PM today. The purpose: Make very clear the plug/socket requirements for Beta only plug/socket and the requirement to eliminate as much work as possible in the creation of various types of cables – thereby, reducing the number of confusing combinations.

Not all members of the Copperheads are of the opinion that a beta only copper connector is required.

A brief look into the SCAT issues table resulted in closure on #1, status update on #2 and further progress on #4 (refer to the issues table for details).

Tom Suturs & Maarten de Vries (Philips) provided a presentation discussing DVB – a market-driven initiative to standardize digital broadcasting worldwide – formed in September, 1993.

The presentation will be made available from the IEEE P1394b ftp repository (Zayante, Inc.). Look for an announcement of availability on the reflector.

It is expected that the June draft (reviewed by a small number of people) will include optimizations for border node functionality. The optimized border node functionality would be agreed in principle during the June meeting. The July draft would incorporate updates (corrections and enhancements) to border node functionality.

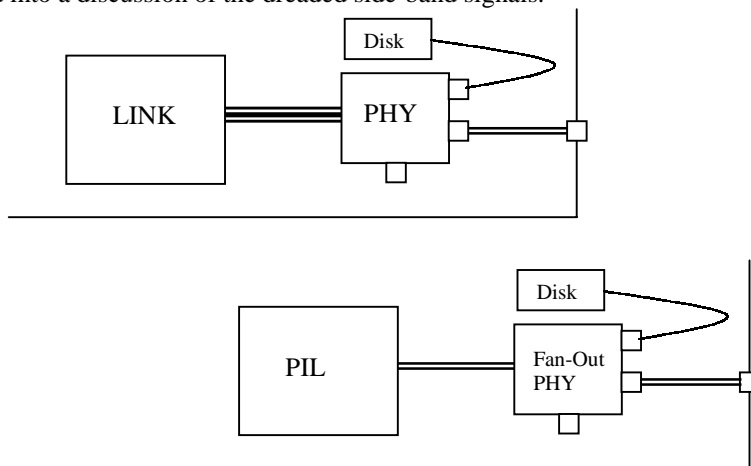
Tom Suturs will e-mail David Wooten a list of technical content DVB needs to have declared as “stable” and David will, in turn, work with SCAT to develop a date by which those technical items shall be declared stable by the IEEE P1394b Working Group.

SCAT reconvened approximately 3:30 PM and continued with the issues table – starting with issue #5. Refer to the issue table database for details.

Day One meeting concluded at 5:30 PM

DAY TWO: April 30<sup>th</sup>

The fan-out PHY does not have to be “transparent” – unless, of course, one requires software support. This lead into a discussion of the dreaded side-band signals.



The configurations above represent the two implementation methods for 1394b. Hardware shall be designed such that both configurations appear identical to software/firmware (e.g. both implementations respond to software stimulus in the exact same manner – timing may be different between the two implementations and software shall not be timing dependent upon hardware response with the exception of specific timings identified in the standard specification).

Further discussion of the PIL-Fan-Out-PHY issues were postponed in favor of a discussion with the cable (Copperheads) folks. The discussion was centered on whether two beta cables should be allowed: one with and one without power or whether all beta cables shall have power. Cable compliance is of concern because the CE folks must be very happy with the beta cable.

The draft shall include two examples of beta cable construction – one which shows parameter compliance using a short distance cable and one which demonstrates parameter compliance using a longer distance (not long haul) cable. The short distance cable should be as close in length to the predominate cable length available in the 4-pin market today. The shorter cable may be in the neighborhood of 1.6 meters. Another method may be to simply use Kirchoff's law for 28 AWG power cables and determine the length over which 1.5 AMPS may be delivered before unacceptable losses occur and then back off a bit from that (this length would be something over 1.6 meters).

A SCAT issue table entry shall be opened for beta only cable construction. A cable which incorporates power conductors shall be consumer friendly (as compliant as those cables which Sony makes available in the market today). It is assumed that the compliance of the cables Sony makes available in the market is the standard by which beta cable compliance shall be compared.

AI: Dick Scheel took an action item to obtain Sony 1394 cable data – e.g. what cable configurations does Sony make available to the market. Dick will also bring a Sony cable to the next SCAT meeting.

Discussion of PIL-Fan-Out-PHY resumed:

A PHY register map was displayed. Each register was examined as to whether the PIL versus the FOP should be required to manage:

| ADDRESS | DESCRIPTION   | OWNER            |
|---------|---|------------------|
| 0000    | Physical_ID, R, PS  | FOP              |
| 0001    | RHB, IBR, Gap_Count   | FOP              |
| 0010    | Extended (7), Total_ports   | FOP              |
| 0011    | Max_speed, Delay  | FOP <sup>1</sup> |
| 0100    | LCtrl, Contender, Jitter, Pwr_class   | FOP <sup>1</sup> |
| 0101    | Resume_int, ISBR, Loop, Pwr_fail, Timeout, Port_event, Enab_accel, Enab_multi | FOP              |
| 0110    | Max_legacy_path_speed, B_link   |                  |
| 0111    |   |                  |
| 1000    |   |                  |
|         |   |                  |

Should MAX\_speed be deprecated in 1394b?

Is Enab\_multi and Enab\_accel required in a P1394b PHY register map?

<sup>1</sup>For the delay and jitter fields there is a homework item to review the gap count calculation procedures (which is used in combination with pinging) to see whether it is sufficient to simply report the delay and jitter for the FOP or whether it is necessary to report the combined delay and combined jitter for the PIL and FOP. In the latter case work out a way to accomplish that.

The port connection between the PIL and FOP is not reported as a port in the FOP self-ID packet (it is the PHY-Link interface and PHY-Link interfaces are not reported as PHY ports).

A SCAT issue table entry shall be opened which makes it clear that a B-PHY shall always return OK == 0 when receiving a Standby command if B-Link == 0. Owner: Colin Whitby-Strevens.

On a restore, a branch node which has been proxying for a leaf node in standby shall pass the node-ID and whether a bus reset occurred while the leaf was in standby.

Two reserved PINT values will be used to indicate restore without reset and restore with reset.

A SCAT issue table entry shall be opened which modifies table 12-11 to include restore with and without notification of a previous bus reset. As part of this, any time the PHY sends the contents of an internal register it identifies whether it is autonomous or not (e.g. table 12-11 value 1001 is the same as 1000 except the register being sent is being sent autonomously) OWNER: Sean Killeen.

Leaf nodes shall return a response packet with OK == 0 if they are root or if the Standby-Hold-Off bit is == 1.

Dismissed 30 April 12:00 noon.

Those in attendance:

| ✓ | V | Name                   | Company             | Email                      | Phone             |
|---|---|------------------------|---------------------|----------------------------|-------------------|
| ✓ | X | Bard, Steve            | Intel               | Steve.bard@intel.com       | 503-264-2923      |
| ✓ |   | Bassler, Max           | Molex               | Mbassler@molex.com         | 630-527-4490      |
| ✓ | X | Brunker, Dave          | Molex               | Dbnker@molex.com           | (630) 527-2622    |
|   | X | Coles, Alistair        | HP                  | anc@hplb.hpl.hp.com        | +44 117 922 8750  |
| ✓ |   | Dorsey, Chris          | ST Microelectronics | christopher.dorsey@st.com  | 972-466-7850      |
| ✓ | X | Fasano, Lou            | IBM                 | fasano@us.ibm.com          | 914-892-8904      |
|   |   | Fidler, Mark           | Hewlett-Packard     |                            |                   |
| ✓ | X | Foster, Tony           | Hewlett-Packard     | tony_foster@hp.com         | (916) 785-1092    |
| ✓ | X | Hannah, Eric           | Intel               | eric.hannah@intel.com      | 408-765-4441      |
| ✓ | X | Hauck, Jerry           | Zayante, Inc.       | jhauck@zayante.com         | 510-668-1006      |
| ✓ |   | Kakihara, Toshio       | IBM                 | Kakihara@jp.ibm.com        | (507) 252-5227    |
|   |   | Kanhere, Prashant      | Zayante, Inc.       | prashant@zayante.com       | 510-668-1773      |
|   | X | Killeen, Sean          | SSL                 | sean.killeen@ssl.ie        | +353 1 402 5700   |
| ✓ | X | Le, Thang              | Hewlett-Packard     | tl@rose.hp.com             | (916) 785-4667    |
| ✓ | X | Lopata, John           | Molex               | Jlopata@molex.com          | (630) 579-4110    |
|   |   | Marazas, Gerald        | IBM                 | marazas@us.ibm.com         | 919-543-6892      |
| ✓ |   | McDonnell, Edward      | HP Labs             | emcd@hplb.hpl.hp.com       | 117-922-8942 (UK) |
| ✓ |   | Richard Scheel         | Sony                | Richard.scheel@am.sony.com | (408) 982-5834    |
|   |   | Selander, Carl         | IBM                 |                            |                   |
| ✓ |   | Michael Smith          | ControlNet          | Michael@controlnet.com     | (408) 341-1428    |
| ✓ | X | Teener, Michael Johas  | Zayante             | mike@zayante.com           | 831-461-4901      |
|   |   | Washburn, Bill         | IBM                 |                            |                   |
| ✓ | X | Whitby-Strevens, Colin | Zayante             | colin@zayante.com          | 831-461-4948      |
| ✓ | X | Wooten, David          | Compaq              | david.wooten@compaq.com    | 281-518-7231      |