

1394 SCAT GROUP

March 22 & 24, 1999

SCAT was jumped right into with No. 7 followed by No. 9. A discussion of Item #16 and #18 took place. SCAT details are documented in the SCAT database.

Max Bassler gave a brief presentation of his current work on a beta-only copper connector (specific to SCAT item #18).

Mechanical Requirements – Maximum interface size: width=8.0 mm x Height = 6.0 mm (for reference [4 ckt.: 7.0 mm x 5.1 mm] & [6 ckt: 12.4 mm x 7.3 mm])

- Fixed contact socket on the printed circuit board
- Moveable contact on the cable plug
- Backward compatible: Cable and or gender changer
- Number of contacts: 2 power and 4 signal
- Cycles: 1000
- First mate power
- Latch option needed
- Panel mounting option
- Panel mount isolated form ground
- Surface mount PCB tails
- AWG: 22 AWG Power 28 AWG Signal-reference for 4.5 meter length

Electrical Requirements:

- Voltage: 40 VDC maximum
- Current: 1.5 A per contact
- Data Rate: up to S3200
- Impedance: 110 +/- 25 Ohms through a 100 ps exception window
- Cross-talk: Less than 5%
- Skew: Intrapair < 10 ps/Interpair < 15 ps

Target Cost: Connector equivalent to current high performance sockets; Cable assembly: Equivalent to current high performance cable assemblies at given speeds (S800, S1600, S3200)

On standard 4-pin and 6-pin circuit connectors, S100/S200 beta-only is not an option so as to prevent speed traps. A Beta mode four pin circuit supports S400, therefore a six-pin circuit will support S400. Therefore, a bi-lingual PHY which implements a 1394a 6-pin connector shall support beta mode speed of S400 and S800.

A rather LONG discussion of connectors and protocol type took place. Protocol type defined as P1394a/1394-1995, Beta-mode only and Bilingual. Connector types being a variety of copper, fiber, 4-pin, 6-pin, beta-only. Some of which, is documented below:

David Wooten informed the group (and Mike Teener confirmed) the Consumer Electronic folks are probably not going to go to a copper beta connection. When they move to 1394b they will go directly to POF.

Beta Speed at Connector Level

	S100	S200	S400	S800	S1600	S3200
4-pin 1394a Bilingual	N	N	Y	N	N	N
6-pin 1394a Bilingual	N	N	Y	O (?)	N	N
Beta-Only (bilingual capable)	N	N	Y	O	O	N ¹
Beta-Only (beta to bilingual not possible)	N	N	N/Y	Y/O	O	N ¹

N = Not Allowed
 Y = Mandatory
 O = Optional

Red = David Wooten's swag at what he thinks should be entered into the table. Those for which N/Y or Y/O exist, a discussion must take place to resolve to a final answer.

¹Note: "Not allowed" because S3200 electricals have been removed from the draft.

A beta only port must be able to connect and communicate with a bilingual port.

	A	BILINGUAL	BETA ONLY
A	Yes (1)	Yes (1)	No
BILINGUAL	Yes (1)	Yes (1)	??? (2)
BETA ONLY	No	??? (2)	Yes (3)

A matrix of plugs and sockets:

SOCKET ↓	PLUG →	P1394A/	BILINGUAL	BETA ONLY
P1394a		Yes	No	No
Bilingual		Yes	Yes	N/A
Beta Only		N	Yes	Yes

The two tables immediately above defines three cables:

P1394a Plug ← → P1394a Plug

Beta Plug ← → Bilingual Plug

Beta Plug ← → Beta Plug

Sockets and plugs shall be designed such that:

- A 1394a plug mates with a bilingual socket;
- A bilingual plug is prevented from mating with a P1394a socket
- A 1394a plug doesn't mate with a beta only socket
- A beta only plug doesn't mate with a P1394a socket

The following SCAT items were reviewed and status updates were detailed (see the SCAT database):
 1, 2, 3, 4 & 5

March 24th Notes: No action other than reviewing and discussing each SCAT table item. All details are included in the SCAT table.

Those in attendance:

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