Attendance:

Ms. Fei Xie	Agilent Technologies, Inc.
Mr. Chuck Hill	Alta
Mr. Paul von Stamwitz	AMCC
Mr. Jesse Jaramillo	Amphenol
Mr. Greg McSorley	Amphenol
Mr. Kevin Witt	Dallas Semiconductor
Mr. Jason Prichard	EMC
Mr. Ramez Rizk	Emulex
Mr. Douglas Wagner	FCI
Mr. Barry Olawsky	Hewlett Packard Co.
Mr. Rob Elliott	Hewlett Packard Co.
Mr. Dan Colegrove	HGST
Mr. James Rockrohr	IBM Corp.
Mr. Harvey Newman	Infineon Technologies
Dr. Mark Seidel	Intel Corp.
Mr. Michael Jenkins	LSI Logic Corp.
Mr. Gabriel Romero	LSI Logic Corp.
Mr. Paul Wassenberg	Marvell Semiconductor, Inc.
Mr. Galen Fromm	Molex Inc.
Mr. Hock Seow	NEC Electronics America, Inc.
Mr. Tim Symons	PMC-Sierra
Mr. Rick Hernandez	PMC-Sierra
Mr. Guillaume Fortin	PMC-Sierra
Mr. Yuming Tao	PMC-Sierra
Mr. Joseph Chen	Samsung
Mr. Alvin Cox	Seagate Technology
Mr. Allen Kramer	Seagate Technology
Mr. Daniel Smith	Seagate Technology
Mr. Himanshu Desia	Seagate Technology
Mr. Benoit Mercier	STMicroelectonics
Mr. Bent Hessen-Schmidt	Synthesys Research, Inc.
Mr. Mahbubul Bari	Vitesse Semiconductor
Mr. Larry McMillan	WDC

33 in attendance

Agenda:

1. StatEye simulations status:
Harvey, Kevin, Mike
SAS-2 Channel StatEye Simulation Results (07-253) [Witt]
http://www.t10.org/ftp/t10/document.07/07-253r0.pdf

SAS-2 10m Cable Results (Stateye Analysis) (07-227) [Newman]
http://www.t10.org/ftp/t10/document.07/07-227r0.pdf

Harvey showed new simulation data. Initial problems were due to a couple of settings. After changing those, simulations now run. The return loss of transmitter and receiver were changed to a filter function. Keep in mind that the data pattern is not 8b10b, so the results are pessimistic.

StatEye 5 availability: Alpha version for the originator should be available in early July with results starting to be presented around the middle of the month. A beta version should be available in August.

2. SAS-2: Improving a Jitter Definition (07-205)
http://www.t10.org/ftp/t10/document.07/07-205r0.pdf
Feedback is needed from other measurement equipment suppliers regarding the comments below. **No comments have been received so far.**

Comments from Bent Hessen-Schmidt, SyntheSys Research, Inc.:

I suggest that we use text equivalent to:

The Reference Clock characteristics are controlled by the resulting JTF (Jitter Transfer Function) characteristics obtained by taking the time difference between the PLL output (the Reference Clock) and the data stream sourced to the PLL. The PLL CLTF -3 dB corner frequency, and other adjustable CLTF parameters such a peaking, are determined by the value required to meet the requirements of the JTF.
The JTF shall have the following characteristics for an encoded D24.3 pattern (1100110011 0011001100). This is the MFTP which is a test pattern that has clock-like characteristics and a transition density of 0.5.
1) The -3 dB corner frequency of the JTF shall be 3 MHz +/-1 MHz.
2) The magnitude peaking of the JTF shall be 3.5 dB maximum.
3) The attenuation at 30 KHz +/-1% shall be 75 dB +/-3 dB.
The JTF -3dB corner frequency and the magnitude peaking requirements shall be measured with sinusoidal PJ applied, with a peak-to-peak amplitude of 0.3 UI +/-10%. The relative attenuation at 30 KHz shall be measured with sinusoidal phase (time) modulation applied, with a peak-to-peak amplitude of 20.8 ns +/-10%.

You will see that we have changed to from 72 db to 75 dB and from 2.1 MHz to 3 MHz and added the word "relative" to the last sentence. Relative should indicate that the 75 dB are with respect to the actual magnitude of jitter on the 30 kHz stimulus. The +/-10% therefore merely sets the starting point and still allows the other vendor. All uncertainties are then included in the +/-3 dB term. Effective tightening of the tolerances can be seen on the residual of the 30 kHz being confined to less than 5.2 ps instead of (7.4 x 1.1 x 1.1 ps = 8.95 ps).

3. 10-meter cable specification (06-499r2)
Time domain versus frequency domain concerns. Not discussed.

4. Zero-length test load (07-013)

Discussion indicates that we need to look at Annex B closely since de-embedding has a significant impact at 6Gbps. The test load limits can be added to the existing section describing the zero length test load.

5. Additional items and updates.
CJTPAT versus JTPAT
Should we stick with CJTPAT as the required pattern and not allow JTPAT as an equivalent? Discussion leaned toward CJTPAT being a more stringent test since it includes a wider spectral content.
Question to all:
Do the header and CRC need to be valid? If these are generated by a tester that just makes up fake data, is that acceptable for the test?

Next call June 21.

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Webex information:
https://seagate.webex.com/seagate
Topic: SAS-2 PHY WG
Date: Thursday
Time: 10:00 am, Central Daylight Time (GMT -05:00, Chicago)
Meeting number: 826 515 680
Meeting password: 6gbpsSAS