Attendance

Mr. Kevin Witt	Dallas Semiconductor
Mr. Kevin Marks	Dell, Inc.
Mr. Mickey Felton	EMC Corp.
Mr. Ramez Rizk	Emulex
Mr. Douglas Wagner	FCI
Mr. Rob Elliott	Hewlett Packard Co.
Mr. Barry Olawsky	Hewlett Packard Co.
Mr. Dan Colegrove	Hitachi Global Storage Tech.
Mr. George O. Penokie	IBM Corp.
Mr. Harvey Newman	Infineon Technologies
Dr. Mark Seidel	Intel Corp.
Mr. Pak Seto	Intel Corp.
Mr. Robert Sheffield	Intel Corp.
Mr. Brian Day	LSI Corp.
Mr. Michael Jenkins	LSI Corp.
Mr. Bernhard Laschinsky	LSI Corp.
Mr. John Lohmeyer	LSI Corp.
Mr. Paul Wassenberg	Marvell Semiconductor, Inc.
Mr. Galen Fromm	Molex Inc.
Mr. Hock Seow	NEC Electronics America, Inc
Mr. Michael Hopgood	Nvidia Corp.
Mr. Rick Hernandez	PMC-Sierra
Mr. Tim Symons	PMC-Sierra
Mr. Joseph Chen	Samsung
Mr. Alvin Cox	Seagate Technology
Mr. Benoit Mercier	STMicroelectonics
Mr. Stephen Finch	STMicroelectronics, Inc.
Mr. Bent Hessen-Schmidt	Synthesys Research, Inc.
Mr. Doug Loree	Toshiba
Mr. Mahbubul Bari	Vitesse Semiconductor
Mr. Jim Scott	Vitesse Semiconductor
Mr. Mark Evans	Western Digital
Mr. Larry McMillan	Western Digital

33 People Present

Agenda

Zero-length test load parameters – No update

Transmitter specification
>Proposal for 6G SAS Spec on Minimum TX Vvma (07-192) [Jenkins]
>http://www.t10.org/ftp/t10/document.07/07-192r0.pdf
>
>Discussed the proposal and included its content in recommended transmitter settings for interoperability of 07-063.
>
>Jitter test pattern CJTPAT
>Discussed the alternate pattern that Mike Jenkins had mentioned previously in teleconferences. At the meeting, he identified a flaw in the logic behind the non-repeatability and has withdrawn the idea from consideration.

Transmitter split into 3 tables:
       Normative specification
       Recommended interoperability settings
       Reference transmitter device definition

       See 07-063r4 for updates.

       The jitter specification for the transmitter is taking a different direction than previously specified. SAS 1.1 defined TJ and DJ. 6G is looking at RJ and DJ. Previous jitter specifications consider TJ = DJ + k*RJ, where k is a number based on the desired BER and RJ is a one sigma value. The numbers we have put in the table don't follow this traditional thinking. This is something to keep in mind when considering measurement equipment and the value itself. We should define this with a note. Any input is welcomed.

Measurement methodology
       Still needing proposal from ST describing the jitter transfer function. It should be posted within a few weeks (according to the author). This will provide alignment between SAS and SATA measurement methodology.

SAS2 StatEye5 (07-185) [Newman]
http://www.t10.org/ftp/t10/document.07/07-185r0.pdf

Harvey presented an overview of StatEye development. A new version is planned for release around august of this year. The web site is undergoing revision and the new version is shifting to Python rather than C++ and Met lab. Harvey was asked to provide access to a SAS-loaded example in version 4 that has the reference transmitter, reference receiver, and reference channel parameters already loaded to aid users in faster simulations by allowing them to just change parameters as required for their particular set of objects rather than having to load the details of every item.

Receiver specification
       Physical TCTF [Bari]
Mabubal to update the proposal started be Adrian. This proposal needs an update to include statistical confidence levels of test results.
       Short cable and nearline applications results [Olawsky]
The short cable results indicated that the long cable testing is sufficient to cover the link performance.
       DFE performance model
       Receiver split into 2 tables:
              Normative specification
              Reference receiver device definition
                     Kevin Witt to provide an initial draft of the reference receiver description. Items include The reference receiver has a 2 tap DFE with infinite precision taps and unit interval tap spacing. The reference coefficient adaptation algorithm is the Least Mean Squared (LMS).
                     The receiver's return loss is illustrated in Figure xyx.
                     Equalized inner eye mask. (100mV vertical and .6 UI horizontal after equalization)
                     Bounds on tap weights (magnitude, time, sign)

Cable specification
       How do we specify a buildable 10-meter cable? No input at the meeting.

Channel specification (reference transmitter and reference receiver plus simulation). Need to complete the reference receiver and transmitter specifications and then make a description of

how to evaluate the channel based on the reference receiver, reference transmitter, and s-parameter measurement of a channel plugged into a generic analysis tool such as StatEye. Harvey may provide a short draft of this methodology.

Since the reference channel is specified by a file that is not practical for paper distribution or manual entry, John Lohmeyer is investigating how the file access can be incorporated in the specification. The proposed reference channel:
SAS 2.0 Transmitter Test Load (07-193) [Fromm]
http://www.t10.org/ftp/t10/document.07/07-193r0.pdf

During joint session: 07-119 SAS-2 Far-end loopback phy test functions [Elliott]