

## SSM MEETING At Seagate T10/02-072r0

February 20 meeting; 9AM to 6PM SSM meeting at Seagate in Scotts Valley, CA – Calling will be set up

The editing session was cancelled and a call for new editor. There was additional calls for a vice chair and it is possible that the secretary may need to be replaced. There was additional discussion about SAS. A lot of the modeling document applies directly to SAS, about 90% applies directly and only 5% would need to be added for SAS. Note: a lot of SSM-TR was used directly by the Fibre Channel modeling work group.

Subject: Draft minutes for the SSM working group on February 20,2002 in Scotts Valley. Paul Aloisi of TI led the meeting. Paul Aloisi of TI took these minutes. Umesh Chandra of Seagate hosted the meeting.  
Last approved minutes: 02-020r1.

### 1. AGENDA SSM MEETING

#### 2. Introductions

Paul Aloisi opened the meeting and conducted the introductions and reviewed the meeting purpose. He thanked Umesh Chandra of Seagate for Hosting the meeting.

### 3. Attendance

Attendance at working group meetings does not count toward attendance requirements for T10 plenaries.

Name	Company	E-Mail	Phone
Paul Aloisi	TI	<a href="mailto:Paul_Aloisi@TI.com">Paul_Aloisi@TI.com</a>	603-222-8687
Larry Barnes	Forel	<a href="mailto:forel@pcisys.net">forel@pcisys.net</a>	719-265-9679
Umesh Chandra	Seagate	<a href="mailto:Umesh_chandra@notes.seagate.com">Umesh_chandra@notes.seagate.com</a>	831-439-7264
Jason Chou	Foxconn	<a href="mailto:JasonC@foxconn.com">JasonC@foxconn.com</a>	408-919-6141
Zane Daggett	Hitachi	<a href="mailto:zdaggett@hcm.hitachi.com">zdaggett@hcm.hitachi.com</a>	603-669-4347x236
Jie Fan	Madison Cable	<a href="mailto:jfan@madisoncable.com">jfan@madisoncable.com</a>	508-752-2884
Bob Gannon	Electronica	<a href="mailto:Pantera_bganmnon@snet.net">Pantera_bganmnon@snet.net</a>	860-537-6800
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### 4. Agenda development

The agenda shown was that used.

### 5. Approval of previous minutes -

The minutes of the last meeting were reviewed and approved with minor changes. The meeting section does not match what was approved by T10.

## 6. Action item review -

Status as of this meeting is shown in section 17.

## 7. Administrative structure

The present administrative structure for SSM / SSM-2 is:

Paul Aloisi, TI, chair SSM / SSM-2

(Call for Vice Chair), LSI Logic, Vice chair and SSM / SSM-2 technical editor (Umesh?)(Larry is using Frame 6 and will support editing in his spare time.) Frame 6 is a requirement for editing the document.

Bill Ham, Compaq, Secy - (Bill may not be able to continue, looking for volunteers)

## 8. Presentation Policy

This item is included for easy reference and will be retained in future minutes.

It is the policy of the SSM working group that all material presented at the SSM working group shall be made available electronically and posted on the T10 web site.

Material presented at the meeting should be uploaded to the T10 web site two weeks prior to the meeting. Alternatively the material may be electronically supplied to the chair or secretary at the meeting where the material is presented at the discretion of the chair.

Material should be free from any statement of confidentiality or restriction of use and should not contain any pricing or product scheduling information.

## 10. Presentations

### 10.1 Carry over presentations

#### 10.1.1 Cable extraction data, Jie Fan, Umesh, Madison/Seagate

10.1.1.1 Single pair data extraction from electrical measurements on round shielded cable, Jie Fan

#### 10.1.1.2 Multiline data extraction from electrical measurements, Umesh (Bruce)

Umesh presented 02-052r1 reviewing the models and test data from Gigatest, still working on the cables

#### 10.1.1.3 Parameter extraction for transition region models, Bob Gannon

#### 10.1.1.4 Parameter extraction from physical description of twist and flat constructions, Greg Vaupotic, Amphenol Spectra Strip

Greg presented information on Twist and Flat cable, it shows difference with twist and flat pairs. Twist and Flat Cable definition for attenuation & variability between pairs needs to be defined in SPI-5.

10.1.2 Periodic Structures in transmission lines, Barnes will continue and present this at a later time.

#### 10.1.3 IBIS presentations, (Open)

Friday will be the vote Bird 72 the fallback driver, Larry will be on the conference call for the vote. He expect there will be no problem.

#### 10.1.5 Models for instrumentation interfaces status, Jason Chou

Jason presented the information on the Agilent probes. The presentation will be posted on the

T10 web site.

10.1.6 Backplane presentation, Bruce Manildi

10.2 New presentations

10.2.1 lossy line modeling and eye diagram prediction, Dima Smolyansky

Dima presented lossy line modeling. Dima handed out CDROM, paper and other presentations. Frequency dependent effects, new software models the loss and the rise time effects. Key points are the dielectric losses becomes the dominate effect at the higher frequency. The software predicts the eye diagram. The software calculates the RLGC with Frequency effect numbers from the waveforms asserted and measured. \$16K for the software package. The software can concatenate cables, this allows for twist and flat models or joining cables or backplanes. This should model the periodic structure effects.

10.2.2 Cable Models and Procedures (02-052) [Bruce Manildi & Umesh Chandra]

Umesh presented 02-052r1 reviewing the models and test data from Gigatest, still working on the cables. When the new data is available 02-052r2 will be posted.

10.3 Basic system model, Bill Troop IBM

10.4 SSM-2 Document review -

10.4.1 SSM-2

11. Matrix development for SSM-2

11.1 Overview section: owner, Bill Ham

11.2 Transceiver chips: owner, (Open)

11.3 Bus segment termination: owner, Paul Aloisi / Don Getty

11.4 Host bus adapter (transceiver board): owners, (Need new owner)

11.5 Mated connectors: owner, Martin Ogbuokiri, Steve Wong

11.6 Transition regions: owners, Bob Gannon, Jason Chou

11.7 Bulk cable: owner, Jie Fan, Zane Daggett, Greg Vaupotic

11.8 Backplane: owner, Larry Barnes, Bruce Manildi

11.9 Cable assemblies, owner Jason Chou (Lead), Bob Gannon, Steve Wong backup

11.10 How to develop IBIS model section 6.2.1, (Open)

12. Simulation integration strategy

Section 12 needs the most work to complete SSM-2. Bill Troop has modeled then built a backplane, the test are promising. This needs to be documented and presented at the meeting.

12.1 System configurations - Topology, Bruce Manildi

12.2 Data patterns, Bill Ham, Bruce Manildi

12.3 Data rate - group - Ultra640 & Ultra1280 additions

### 13. Tools:

### 14. New business

There was a discussion about SAS, most of the work in SSM-2 applies toward SAS. Adding SAS modeling to the SSM-2 document would only add about 5%. The only thing SAS would not use is the multidrop bus.

### 15. Status of models supplied to the T10 web site

### 16. Next meetings

April 2 PIP, April 3 PIP editing, April 4 SSM New Hampshire - Hitachi Cable  
June 18 SSM Editing, 19 SSM, 20 PIP Lisle, IL - Molex (Editing meeting Tuesday or Thursday)  
Aug PIP Editing, PIP, SSM Jason, Southern California  
Oct 15 SSM Editing, 16 SSM, 17 PIP Jie, Massachusetts  
Dec PIP Editing, PIP, SSM Bob Gannon Pantera Electronica Mexico

### 17. Action Items:

#### 17.1 Action items from previous meetings

Jie Fan, Madison Cable to provide access info for a point to point bulk cable model to the T10 web site.  
Status: model is done, verified and are available internally in circuit form - still needs info supplied to T10 web site - needs web link from internal IT folks - carried over with progress - Paul A to write a brief note to Chuck Grant explaining the need to break thru Madison's internal roadblocks.  
Carry over

Zane Daggett, Hitachi, to provide bulk cable models to the SSM web site (per last meeting minutes).  
Status: expect posting before next meeting (round 30 AWG solid will go up first followed by flat TPO) - carried over with no known progress  
Complete

Paul A to send emails to all folks with open action items on Tuesday of each week (until the action item is completed).  
Status: ongoing

Larry Barnes to take the material in the SPI-3 and SPI-4 document relating to the signal budget and figure out how to incorporate into the SSM document  
Status: carried over  
Ham to contact John Lohmeyer to determine position on providing pointers to extracted models not from suppliers.  
Status: Complete

Greg Vaupotic to supply model for 30 AWG solid, TPE dielectric, twist and flat. Models for the flat region and for the twist region from 2D simulations, multiple frequencies to be supplied separately. Complete model for flat + twist needs to be constructed by the user from RLGC matrices.  
Status: carried over

Jie to supply source figures describing the curve fitting extraction method to Larry.  
Status: carried over

Jie to present the RLGC data resulting from the curve fitting at the

October meeting.  
Status: carried over

Paul Aloisi to contact Martin O to determine if he can host the June 2002 PIP/SSM meetings  
Status: Done - Martin will host the June Meetings.

Paul Aloisi to contact Jason Chou to determine if he intends to complete the material on instrumentation interfaces.  
Status: Done Presented

Bruce Manildi to contact connector suppliers to determine how they can help to supply models for unmated connectors.  
Status: On going - Gigatest working on the testing.

Larry Barnes to investigate the use of Placeware for meetings  
Status: LSI Application which is not available now.

Bob Gannon to investigate IDC effects in transition regions for flat cables.  
Status: On going

Bruce Manildi to investigate IDC effects in transition regions for round cables.  
Status: on going

#### 17.2 New action items from present meeting

Individuals are checking with there management for the positions of Vice Chair, Secretary and editor.

Larry Barnes will report on the IBIS vote for the fall back driver.

Jason Chou will work with his management to see if they can host the August meeting.

#### 18. Adjourn

The meeting adjourned at 4:00 PM