

Accredited Standards Committee*
INCITS, Information Technology



Doc. No.: T11/03-427v1
Date: August 12, 2003
Project: FC0 FC-MJSQ ad hoc
Reply to: Dennis Petrich
Allen Kramer
Bill Ham

To: Membership of T11.2
From: Dennis Petrich, chair FC-MJSQ working group
Allen Kramer, vice chair FC-MJSQ working group
Bill Ham, secy FC-MJSQ working group
Subject: Approved minutes of T11.2 FC0 FC-MJSQ working group on June
03, 2003

Agenda

1. Opening remarks and introductions
2. Attendance and membership
3. Approve agenda
4. Document distribution
5. Review minutes of previous meeting
6. Review old action items
7. Call for patents
8. Liaison reports
 - 8.1 T10 (SAS), Ham
9. New discussions/presentations
10. Old discussions / presentations
11. Editing of MJSQ sections
 - 11.1 General status, Ham
12. Old Business
 - 12.1 T11.2 letter ballot comments resolution
 - 12.2 Strategy for completing MJSQ, Petrich
 - 12.3 Additional topics for future consideration (MJSQ-2)
13. New Business
 - 13.1 Standardizing a method to produce compliance numbers and jitter budgets
14. Review action items
 - 14.1 Old action items from past meetings
 - 14.2 New action items from this meeting
15. Next meetings
16. Adjourn

Results of Meeting

1. Opening remarks and introductions

Dennis Petrich, chair, led the meeting. Dennis opened the meeting at 9:00 AM. Bill Ham thanked the host, Dennis Petrich of Wavecrest, for hosting the meeting. Bill Ham took these minutes.

2. Attendance and membership

Attendance at plenary meetings does count toward minimum attendance requirements for T11.2 membership. Working group meetings are open to any person or organization directly and materially affected by T11.2's scope of work but do not count toward minimum attendance for T11.2 membership.

The following people attended the meeting:

Name	Company	Tel
Edward Grivna	CYPRESS	952-851-5046
Greg McSorley	EMC	(508) 382-5928
Thomas Linnell	EMC CORP.	(508) 435-1000 x2149
Frank Barber	eSilicon Corporation	(610) 439-6850
Helena Feng	Fiberxon	408.562.6291
Arne Niska	GENERAL DYNAMICS Advanced	(952) 956-5118
Bill Ham	HP	508-841-2629
Bruce Schober	HP	208.396.4102
Kevin Sherman	IBM	802.769.7742
Vasanta Rao	Infineon Technologies North	408-501-5811
Schelto van Doorn	Intel Corporation	408.398.2441
Eric Borisch	JDS Uniphase	507.322.9204
Mark Marlet	LSI	
Alan Pfeifer	LSI Logic Corporation	(316) 636-8898
Andy Nowak	MADISON CABLE	608.752.2884
Chris Shmatovich	MERITEC	530.891.3551
Farooq Yousuf	Mindspeed Technologies	(949) 579-4052
Mark Beranek	NAVAIR	(301) 342-9115
Dean Wallace	QLOGIC	949-389-6480
Larry Barnes	Qlogic	949.389.7509
Mark Owen	Qlogic	952.908.2326
Abhijit Shanbhag	Scintera	408.557.2810
Allen Kramer	SEAGATE	612-402-2624
Bill Pagano	Seagate	719.268.5610
Jesse Chin	STRATOS	650.810.2349
Vit Novak	Sun Microsystems	510.936.3284
Mark Guenther	Tektronix	503.627.4233
Doug Day	Toshiba America Electronic	(408) 526-2400
Tom Lindsay	UI Technologies	(425) 775-7013
Haluk Aytac	Velio Communications, Inc.	(408) 474-0732
Kim Gray	Vixel	(425) 806-4012
Dennis Petrich	Wavecrest	408-436-9000
John	Wavecrest	952.857.1849
Steve Froasch	Wavecrest	952.646.0068
Paul Levin	XYRATEX	310.372.7352

3. Approve agenda

Dennis moved and Shelto seconded that the agenda as shown above be approved. The motion passed without objection.

4. Document distribution

This section describes the availability of draft documents that are intended to be published as a result of work by the MJSQ committee.

Document distribution is now being done over the web. Documents relating to MJSQ work can be found on the T11 web site (www.t11.org) by going to "documents" and searching on the key words "jitter" and/or "MJSQ".

The only active document in this working group is the MJSQ technical report presently at rev 10.0.

A summary of the presently active policy to document distribution is included for reference.

All presentations are posted electronically at the approved ftp within two weeks after the meeting. Format must be an approved electronic file format. While we are still paper based, a paper copy must also be given to the secretary at the working group meeting.

(Presentations are defined as material shown publicly in the Plenary or authorized working group meetings.)

Submission of Documents for T11 Document Numbers:

A online system is now available to provide document numbers and accept the submission of documents. The system is accessed via the t11 web page at <http://www.t11.org>. Follow the "docs" link in the left-hand frame, or at the bottom, and fill in a form giving details about the document. In order to complete the form, it will be necessary to enter a password. The password is given out at T11 meetings, or can be obtained from the T11 Chair. Instructions will then be given about uploading the file to the ftp site at [ftp.t11.org](ftp://t11.org).

We now use all electronic document distribution.

A T11.2 reflector is operational over the T11 site.

The committee forms its agenda by the following:

1. A call (reminder) for presentations by the chair 3 weeks in advance
2. Those wanting to be on the agenda submit request including:
title
presenter

time required
abstract

3. Chair creates agenda and posts 2 weeks in advance of the meeting
4. At the meeting it is the chair's discretion to allow additional presentations

5. Review minutes of previous meeting

The minutes of the last MJSQ working group were reviewed with some minor editorial changes. Motion Ham/Petrich that the minutes as modified be accepted. Motion passed without objection. The amended minutes will be posted to the ftp site.

Action item: Ham will get the document number and do the posting.

6. Review old action items

The old action items were reviewed and the status was updated.

7. Call for patents

Below is the formal call for patents which was issued by Dennis at the meeting:

PATENTS

- A call is hereby issued for the existence of patents required to implement the results of any & all T11 projects to be disclosed. It is necessary for the holders to agree to license those patents in conformance with the ANSI patent policy if the project on which they read is to proceed. T11.2 is not involved in this process @ all!*
- The contact @ ANSI is the General Counsel, Ms. Amy Marasco -(212)642-4954 or amarasco@ansi.org*
- Patent policy description @ www.ansi.org/proctbl.html, section 1.2.11*
- IBM has declared that it has patents which apply to the practice of FC & SB CON. The contact is:
Tom Slattery, Program Director, IBM Corporation, North Castle Drive, Armonk, New York 10504
Tel: (914) 765-4351, Fax: (914) 765-4390, Email: tmslatt@us.ibm.com
Thanks to Stuart Berman of Vixel for tracking down this new contact*

There was some discussion about whether this call for patents needs to be made in ad hoc groups. It was noted that formal statements of specific patent policy compliance issues from individual companies are to be made at the T11 (main) plenary, not working groups, or sub plenary groups (i.e. T11.2).

Discussions on cross licensing pricing are not appropriate at any level. See T11 web site for more details.

Technical discussions are acceptable.

There was no response to this call for patents.

8. Liaison reports

8.1 T10 (SAS), Ham

Bill noted that there is presently no activity in SAS related to signal quality issues.

9. New discussions/presentations

10. Old discussions / presentations

11. Editing of MJSQ sections

11.1 General status, Ham

The next version of the MJSQ document is rev 11 that captures the comments resolutions from the T11.2 letter ballot. Rev 11 has not been posted pending completion of the comments resolutions.

12. Old Business

12.1 T11.2 letter ballot comments resolution

A start in resolving comments received prior to and in this meeting was made. A comments resolution document was created (03-317v1).

12.2 Strategy for completing MJSQ, Petrich

The present strategy is to request a T11 letter ballot on rev 11 of MJSQ after the next plenary week in August. Interim con calls (probably 2)

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to continue comments resolutions will be scheduled.

Consider forwarding MJSQ to INCITS and ISO for publication as an international technical report. This needs to be voted on by the ad hoc.

12.3 Additional topics for future consideration (MJSQ-2)

[no changes to this list at this meeting]

Phase noise vs. Jitter
ref clock standard and specification
jitter distribution issues
further detail concerning compensation issues
speed agility issues
low population DJ (scrambling, 64/66 etc.)
receiver bandwidth specifications
more implementation examples
receiver tolerance roadmaps
compliance interconnect extensions (active, non-linear)
common mode
parallel-serial issues
cross talk issues
resonance issues
test sample design

Improved compliance testing methods of FC systems

Enhancements to MJSQ to include interactions of:

- signal/noise
- slew rate
- receiver sensitivity
- component bandwidth
- transmission reflections

Additional methodologies as may be proposed

13. New Business

13.1 Standardizing a method to produce compliance numbers and jitter budgets

This topic was introduced as a result of questions raised during the comments resolution process. There are several methods described in MJSQ for producing measurements of DJ and TJ. While these methods are all more or less based on the same basic mathematics the definitions for especially DJ are different and will therefore produce different numbers.

In order to have a consistent numerical output from different measurement methods the following scheme is recommended:

Use the mathematics defined for the equivalent jitter as the numerical definition for DJ and TJ used for compliance (level 1). The CDF distribution used as the input for the equivalent jitter

calculations may come from any method that produces legitimate CDF distributions.

The equivalent jitter calculation will be removed from the methods list and placed in a separate clause.

Motion Lindsay/Ham to accept the above method as that to be used in MJSQ.

Motion passes 17 for, 0 opposed, 2 abstain

14. Review action items

[Note: the following material describes the practice being used in the MJSQ-2 minutes for presenting and reporting status on the action items.]

This section contains the action items agreed during the meeting. Only action items with identified people who are responsible to do the action are recorded. Once an action item has been created there are two ways to get an action item removed from this list: (1) complete the action item - preferred method - and (2) the action item has become no longer relevant or appropriate because events have changed since the action item was created. It is possible for an action item to be transferred to another person but that will not remove it from the list and the new owner will be listed along with the record that the ownership has changed.

There are two divisions under this item: (1) old action items which were created in earlier meetings and (2) new action items which were created during this meeting. There is no tracking of the meeting where the action item was originally created (other than by looking back at previous minutes.)

All action items that were completed by the time the action items were reviewed are given the designation "done". The done action items will remain on the list in the draft and approved minutes for the meeting in which the action item was reported to have been completed. This is to ensure that the person responsible for the action item get the credit/blame for the work. Action items that were reported done in one meeting will be removed from the list for the minutes of the next meeting.

14.1 Old action items from past meetings

Status as of this meeting is shown:

Bill Ham to post the minutes to the web site.
Status: done

Dean Vermeersch to investigate methods for accounting for test artifacts using TDW (formerly VTD) approaches.

Status: carried over to MJSQ-2

Allen Kramer to provide beta R write up for the document
Status: overcome by events

Henri Merkelo to put his presentation on design in dispersively lossy environments on the T11 web site.
Status: overcome by events

Ali Ghaisi to post his presentation on 10 Gb/s measurements.
Status: carried over

Mark Marlett: to do network analyzer sweeps on instruments, use a third method eg. Spectrum analyzer, and determine if test equipment used a differential input
Status: carried over

Schelto to investigate the process for forwarding a technical report to ISO.
Status: done - all we need is a vote at T11

Ham to schedule con calls for comments resolution
Status: done

Mark Guenther to provide improved fig 54
Status: done

Mark to provide the equations for DJ in clause 6.6.2
Status: done

Dennis to provide the equation for DJ and TJ for clause 6.5.7
Status: carried over

14.2 New action items from this meeting

Bill Ham to post the revised comments resolution document (03-371v1)
Status: new

Paul Levin and Mark Marlett to propose a resolution to Xyratex comments number 42 and 44 on the T11.2 letter ballot.
Status: new

Bill Ham to schedule additional comments resolution con calls.
Status: new

15. Next meetings

The next working group meeting will be requested for Tuesday August 12 2003, in Cambridge, MA, from 9AM to 5:30 PM.

16. Adjourn

The meeting adjourned at 5:30PM.