

Accredited Standards Committee*
INCITS, Information Technology



Doc. No.: T11/03-612v1
Date: October 06, 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 August 12, 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 and thanked the host, Paul Levin of Xyratex, 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
John Kulick	Agere	610 712 1812
Ali Ghiasi	Broadcom	408.922.4723
Edward Grivna	CYPRESS	952-851-5046
David Lewis	E2OCommunications, Inc	(818) 466-2832
Greg McSorley	EMC	(508) 382-5928
Thomas Linnell	EMC CORP.	(508) 435-1000 x2149
Todd Swanson	Finisar Corporation	(408) 542-4113
Nabil Osman	Fujikura Technology America Corp.	(408) 748-6991
Kevin Sherman	IBM Microelectronics	(802) 769 7742
Jens Fiedler	Infineon Technologies AG	+49 (0) 30 386-2 25
Brad Booth	Intel Corporation	(512) 732-3924
Schelto van Doorn	Intel Corporation	408.398.2441
Eric Borisch	JDS Uniphase	507.322.9204
Michael Jenkins	LSI Logic	408-433-7901
Alan Pfeifer	LSI Logic Corporation	(316) 636-8898
Farooq Yousuf	Mindspeed Technologies	(949) 579-4052
Graham Copley	Nortel Networks	(613) 765 4128 ext 395
Nigel Alvares	PMC-Sierra	
Vikas Choudhary	PMC-Sierra	
Yuriy Greshishchev	PMC-Sierra	(613) 271-4034
Greg Casey	Qlogic	952.932.4095
Allen Kramer	SEAGATE	612-402-2624
Bill Pagano	Seagate	719.268.5610
Vit Novak	Sun Microsystems	510.936.3284
Rajeev Jain	Texas Instruments Incorporated	(214) 480-2778
Bob Rumer	VITESSE	805-445-2290
Kim Gray	Vixel	(425) 806-4012
Dennis Petrich	Wavecrest	408-436-9000
Michael Dearman	Xyratex	+44 (0) 23 9249 6303
Paul Levin	XYRATEX	310.372.7352

Total: 30 attendees

3. Approve agenda

Vit Novak moved and Dennis 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 11.0.

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>.

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 & SBCON. 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 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 12 that captures the comments resolutions from the T11.2 letter ballot. Rev 12 has not been posted pending final editing.

12. Old Business

12.1 T11.2 letter ballot comments resolution

[Note that the balloted revision was rev 10. Rev 11 is an interim, unballoted, revision that contains many, but not all, of the comment resolutions for comments made against rev 10. Rev 11 was used for this meeting to expedite the comment resolution process. Rev 12 will contain all of the comments resolutions.]

After extensive review and editing of Rev 11 of MJSQ and the comment resolution document, 03-317v2, the following motion was made:

Motion Ham/Petrich that the comment resolutions contained in 03-317v3 (as created in this meeting) be accepted by the MJSQ ad hoc in satisfaction of the T11.2 letter ballot and that the MJSQ ad hoc recommend to the T11.2 plenary that rev 12 of MJSQ (03-042v3) that

Page 5

* Operating under the procedures of The American National Standards Institute.
INCITS Secretariat, Information Technology Industry Council (ITI)
1250 Eye Street NW, Suite 200, Washington, DC 20005-3922
Email: incits@itic.org Telephone: 202-737-8888 FAX: 202-638-4922

contains these comments resolutions be forwarded to T11 for further processing in the form of a T11 letter ballot.

Motion passes 18 for, 0 against, 3 abstain.

12.2 Strategy for completing MJSQ, Petrich

The present strategy is to request a T11 letter ballot on rev 12 of MJSQ after the T11 plenary this week.

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:

Page 7

* Operating under the procedures of The American National Standards Institute.
INCITS Secretariat, Information Technology Industry Council (ITI)
1250 Eye Street NW, Suite 200, Washington, DC 20005-3922
Email: incits@itic.org Telephone: 202-737-8888 FAX: 202-638-4922

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

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

Dennis to provide the equation for DJ and TJ for clause 6.5.7
Status: overcome by events

Bill Ham to post the revised comments resolution document (03-371v1)
Status: done
Paul Levin and Mark Marlett to propose a resolution to Xyratex comments number 42 and 44 on the T11.2 letter ballot.
Status: done

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

14.2 New action items from this meeting

Ham to create rev 12 and post 03-317v3
Status: new

Dennis to make the motion for forwarding MJSQ to T11 in the T11.2 plenary
Status: new

15. Next meetings

The next working group meeting will be requested for Tuesday October 07, 2003, in Oklahoma City, OK, from 9 AM to 5:30 PM.

16. Adjourn

Motion Petrich/Kramer to adjourn. Passes unanimously.

The meeting adjourned at 5:30PM.