

Accredited Standards Committee*
INCITS, Information Technology

Doc. No.: T11/04-196v1
Date: April 05, 2004
Project: FC0 FC-MJSQ ad hoc
Reply to: Bill Ham
Allen Kramer

To: Membership of T11.2

From: Bill Ham, acting 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
February 02, 2004

Agenda

1. Opening remarks and introductions
2. Attendance and membership
3. Approve agenda
4. Document distribution
5. Review minutes of previous meeting
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8. Liaison reports
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14. Review action items
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 - 14.2 New action items from this meeting
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16. Adjourn

Results of Meeting

1. Opening remarks and introductions

Bill Ham, acting chair, led the meeting. He opened the meeting at 9:00 AM and thanked the host, Skip Jones of QLogic, for hosting the meeting. He then led a round of introductions. Bill Ham, secy, 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
Greg LeCheminant	Agilent	707.577.6524
Jay Proano	Broadcom	949.926.5980
Hossein Hashemi	EMULEX	714-513-8226
Frank Barber	eSilicon Corporation	(610) 439-6850
Michael Fitzpatrick	Fujitsu Computer Products of	(405) 755-8073
Bill Ham	HP	508-841-2629
Bruce Schober	HP	208.396.4102
Schelto van Doorn	Intel Corporation	408.398.2441
Alan Pfeifer	LSI Logic Corporation	(316) 636-8898
Andrew Nowak	MADISON Cable Corporation A	(508) 752-2884
Yuriy Greshishchev	PMC-Sierra	(613) 271-4034
Devin Ng	Qlogic	949.389.7540
Allen Kramer	SEAGATE	612-402-2624
Vit Novak	Sun Microsystems	510.936.3284
Rajeev Jain	Texas Instruments Incorporated	(214) 480-2778
Doug Day	Toshiba America Electronic	(503) 860-7081
Tom Lindsay	UI Technologies	(425) 775-7013
Craig Emmerich	Wavecrest	952.646.0524
Tom Palkert	Xilinx	952.401.7997
Paul Levin	XYRATEX	310.372.7352
Total:	20 attendees	

3. Approve agenda

Ham moved 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 12.0.

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 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

Informal liaison has occurred to adopt MJSQ methods formally. It is expected that a special working group meeting may be called at the SAS meeting in March in Dana Point.

8.2 Labeling project in SFF committee (8082), Ham

Document is on SFF web site

8.3 OIF / UXPI / STATISTICAL EYE DIAGRAM, Tom Palkert

Tom noted that some work in OIF based on statistical eye diagrams was going on.

9. New discussions/presentations

9.1 Jitter optimized sampling oscilloscope, Greg LeCheminant, Agilent

Greg presented additional material relating to a jitter optimized sampling oscilloscope method. This material, suitably modified was proposed for inclusion in MJSQ as another method for capturing a CDF. Basically, this method is a high bandwidth sampling oscilloscope that only captures data in the part of the signal that is of interest to jitter at a specific time in the bit period. By focusing the data acquisition on only this part of the signal orders of magnitude improvement is achieved in the data acquisition time @ E-12.

A signal edge modeling scheme is used on a repeating pattern to convert the signal level jitter observed at a specific time to time jitter at the signal level of the edge that corresponds to the edge model at the specific time.

There were no issues identified that were invalidations for the method.

It was noted that cross talk could alter the shape of specific edges and affect the validity of the edge model. It was also noted that broadband cross talk or power supply noise would not exhibit spectral peaks and would appear as part of the RJ or noise floor. This would produce a somewhat larger measurement of RJ than is truly Gaussian. The latter issue appears to be substantially the same for this method as for the TIA and real time scope methods.

Additional presentations are expected in April if needed.

10. Old discussions / presentations

11. Editing of MJSQ sections

11.1 Comments resolutions

Using the latest copy of the comments resolution document that Dennis has comments made by folks who were present were addressed. The result of these resolutions are contained in document 04-007v3.

Additional telecons are to be scheduled before the next meeting to complete the comments resolutions.

11.2 General status, Ham

The next version of the MJSQ document put on the web site will be rev 13 that captures the comments resolutions from the T11 letter ballot through the February 2004 con calls.

12. Old Business

12.1 Strategy for completing MJSQ

The present strategy is to complete the T11 letter ballot comments resolutions via aggressive telecons. As of this meeting approximately 2/3 of the technical comments have been resolved. At this stage it appears that all comments will be resolved before the next meeting in February.

Formally, a document that contains all the comments resolutions could be forwarded to INCITS since the T11 letter ballot passed and all comments have been resolved. That was the strategy before this meeting.

However, with the significant restructuring of the document and some important technical changes that resulted from the letter ballot it was the sense of the group that another T11 letter ballot should be conducted on rev 13 prior to forwarding to INCITS for publication. This is planned for rev 13 with a T11 letter ballot to be requested after the February 2004 meeting.

If comments against rev 13 are not extensive, the document will be forwarded to INCITS in April, 2004.

12.2 Additional topics for future consideration (MJSQ-2)

This is a running list of candidate topics for MJSQ-2

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 MJSQ-2 project proposal

With the heavy load of getting the comments resolved there was no need to proceed with this proposal at this meeting. This topic is deferred to at least April 2004.

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

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: overcome by events (Mark whereabouts not known)

Ham to request 4 telecons to continue work on the T11 letter ballot comments
Status: new

14.2 New action items from this meeting

Ham to schedule telecons as necessary to complete letter ballot comment resolution.
Status: new

Ham to produce rev 13 of MJSQ that contains the resolutions to the comments and request a second T11 letter ballot
Status: new

15. Next meetings

The next working group meeting will be requested for Monday April 05, 2004, in Seaside, CA from 9 AM to 5:30 PM.

16. Adjourn

Motion Kramer/Ham to adjourn. Passes unanimously.

The meeting adjourned at 5:30PM.