

Approved Agenda -- X3T9.2 Meeting #78

1. Opening Remarks
2. Approval of Agenda
3. Attendance and Membership
 - 3.1 Roll Call of Members in Jeopardy
4. Approval of Minutes - August Meeting Milpitas, CA (X3T9.2/88-096)
5. Document Distribution
6. Liaison Reports
 - 6.1 ISO
7. Review of Old Action Items
8. Working Group and/or Project Status Reports
 - 8.1 ESDI
 - 8.1.1 ESDI Public Review Comment Resolution
 - 8.2 Flexible Disk
 - 8.3 SCSI General Working Group (X3T9.2/88-109)
 - 8.4 Fiber Optic Physical Layer Study Group
 - 8.5 Autoconfiguration SSWG
 - 8.6 Transmission Line SSWG
 - 8.7 Medium Changers SSWG
 - 8.8 Hierarchical Filemarks SSWG (X3T9.2/88-107)
9. Old Business
 - 9.1 SCSI Device Connector Orientation (X3T9.2/88-80 Rev 2)
 - 9.2 Number of Terminator Power Lines for SCSI-2 (X3T9.2/88-48R1,-77,-87)
 - 9.3 Schedule for SCSI-2
 - 9.4 Review of SCSI-2 Draft Document (X3T9.2/86-109 Rev 5)
 - 9.4.1 12-byte LOG SELECT/SENSE (X3T9.2/88-95)
 - 9.4.2 Rotational Position Locking
 - 9.4.3 Device Models
 - 9.4.4 B Cable Data Transfer Requirements (X3T9.2/88-108)
 - 9.4.5 Generic Error Recovery Page (X3T9.2/88-103 Rev 1)
 - 9.4.6 What if the initiator fails to negate ATN per Table 5-27
 - 9.5 Connector Proposals
 - 9.5.1 AMP (X3T9.2/88-133,134)
 - 9.5.2 Stewart Stamping Connector Proposal (X3T9.2/88-67,-111,-128)
 - 9.5.3 Plating & maximum envelope -- Amphenol
 - 9.6 Format Progress Reporting
10. New Business
 - 10.1 Review of new documents
 - 10.2 Agenda for Austin Working Group
 - 10.3 Alternative S.E. terminator
 - 10.4 Terminate indicate
11. Review of Action Items
12. Meeting Schedule
 - 12.1 General Working Group Schedule for 1989
13. Adjournment

Minutes -- X3T9.2 Meeting #78

1. Opening Remarks

John Lohmeyer, the Chairman, called the meeting to order at 9:00 a.m., Monday October 10, 1988. He thanked Mary Jane Strohl (in absentia) of Apollo for hosting the meeting and he also thanked Classic Conferences for arranging the meeting.

He apologized in advance for Dal Allan's, Larry Lamers', and his lack of alertness due to having just returned from the SC-13 meeting in Tokyo.

As is customary, the attendees introduced themselves. A copy of the X3T9.2 membership list was circulated for attendance and corrections. Copies of the draft agenda and the recent document register were made available to all attendees. Information on X3T9.2 and Document Distribution Application forms were made available for new attendees.

2. Approval of Agenda

The draft agenda was approved with the following additions:

3. Attendance and Membership

The membership requirements were reviewed. The Chairman stated that since the last meeting several changes had occurred in the voting membership: Masayuki Yokoyama has replaced Sergio Fonesca as Sony's Alternate; Anil Gupta has replaced Ken D'Souza as Western Digital's Alternate; and Martin Pullam and M. Perugini of Winchester Electronics have become voting members of the committee. Martin Pullam was a Principal member of the committee previously when he worked for JAE.

At the meeting, Jim Harper of Optotech was reinstated as a Principal member.

John Lohmeyer said he was sorry if he had frightened anyone at the last meeting by announcing those organizations which had not paid their service fees. After some analysis, the X3 Secretariat had determined that their membership lists were only about 25% accurate. They were re-entering the membership lists from the committee lists to bill the correct people in the organizations. No one will be terminated for non-payment until the Secretariat's lists are straightened out.

Enclosure (1) is the list of attendees at the meeting. Enclosure (2) is the X3T9.2 membership changes since the last minutes and enclosure (3) is the current X3T9.2 membership list.

3.1 Roll Call of Members in Jeopardy

The Chairman stated that he had sent jeopardy letters to all representatives of the following organizations: A.C.T./Shugart, Advanced Micro Devices, Congruent Software, Inc., Datacopy Corp., Interphase Corp., Iomega Corp., MAI Basic Four, Mitsubishi Electronics America, Northern Telecom, Inc., Seagate Technology, Storage Technology Corp., Sun Microsystems, Inc., and Technology Forums, Ltd. The letters said that these organizations had failed to attend two of the last three plenary

meetings and that their membership would be terminated unless they attended the October plenary meeting. The letters to Michael O'Donnell of Storage Technology and Moshe Segal of AMD were returned marked that they are no longer at their addresses.

Representatives were present from all of the organizations except A.C.T./Shugart, and MAI Basic Four. These organizations were changed to Observer status.

4. Approval of Minutes - August Meeting Milpitas, CA (X3T9.2/88-096)

The minutes were approved as written.

5. Document Distribution

The Chairman stated that the X3 Secretariat had once again processed the mailing promptly, but that due to the large size, they had to authorize overtime for the copy service in order to meet the two-week rule. Kate McMillan has requested that the next mailing be split into two mailings: the first would include SCSI-2 Rev 6 and the second would include new documents from the Austin working group meeting. The second mailing may not arrive two weeks prior to the December meeting due to the short time between meetings. The idea is to give the secretariat more lead time on the bulky part of the mailing. John Lohmeyer requested that all documents for the next mailing be sent to him by October 28.

The following new documents were distributed at the meeting:

Document	Doc Date	Author	Description of Document
X3T9.2/88-65 Rev 3	10/10/88	P. Boulay	Asynchronous Event Notification Revision
X3T9.2/88-95 Rev 1	9/30/88	B. Pentecost	LOG SELECT and LOG SENSE commands for Large Logs
X3T9.2/88-107 Rev 1	10/3/88	B. Homans	Hierarchical Filemarks (Setmarks)
X3T9.2/88-108 Rev 1	10/6/88	R. Snively	B Cable Data Transfer Requirements
X3T9.2/88-116		J. Stai	Disable function for "IGNORE WIDE RESIDUE" message
X3T9.2/88-118	9/27/88	J. Lohmeyer	Interpretation of the Connector Standing Rules
X3T9.2/88-119	9/29/88	B. Weber	NCR Public Review comment on dpANS BSR X3.170-198X (ESDI 2.A)
X3T9.2/88-120	10/9/88	B. Spence	Data Pointer
X3T9.2/88-121	10/10/88	P. Boulay	Disconnect Control via Mode Select
X3T9.2/88-122	9/20/88	S. Jones	Change Definition vs. Inquiry Inconsistency
X3T9.2/88-123	9/30/88	D. Allan	Common Access Method Committee
X3T9.2/88-124	10/6/88	S. Cornaby	Progress Reporting
X3T9.2/88-125	10/8/88	B. Spence	Notice re the November X3T9.2 Working Group Meeting
X3T9.2/88-126	10/5/88	T. Wicklund	Comments on SCSI-2, Revision 5 document
X3T9.2/88-127	10/10/88	G. Penokie	Error Handling Action Codes
X3T9.2/88-128	10/10/88	D. Hatch	Stewart Connector presentation

Enclosure (4) is the current 1988 document register.

6. Liaison Reports

6.1 ISO

The ISO/JTC 1/SC 13 meeting the week of 3 October in Tokyo was attended by delegates from Denmark, Germany, F.R., Japan, Sweden, United Kingdom, U.S.A., and the U.S.S.R. In addition there was liaison representation from ISO/IEC JTC 1/SC 6, ISO Central secretariat Geneva, and the ISO/IEC JTC 1 (Vice Chairman).

During the work, SC 13 passed the following resolutions:

- (1) terminate consideration of the LDDI under Project 1 in favor of the newer alternative interface FDDI;
- (2) progress DIS 9314-1 on FDDI PHY to the Central Secretariat for final processing with applicable editorial changes (including elimination of the Foreword), the elimination of references to contacting the secretariat for further information, a change of Note 2 on page 7 to "This primitive is not used by ISO 9314-2 FDDI MAC.", and correction of the typographical error in Figure 4 on page 29 to label Input(I) as (30a) rather than (31a).
- (3) initiate an amendment to IS 9314-1 on FDDI PHY to delete the unused service primitive.
- (4) progress DIS 9314-2 on FDDI MAC to the Central Secretariat for final processing with applicable editorial changes (including elimination of the Foreword and moving Normative References 6 and 7 to an informational reference at the end of the standard), the elimination of references to contacting the secretariat for further information, a change of Note 2 on page 12 to "This PHY to MAC service primitive is not used by this standard.", changing note 4 on page 24 to "This clause is the subject of a future amendment.", changing note 5 on page 40 to "The list of Valid Frame criteria may be the subject of a future amendment.", and by the editorial clarification of the last paragraph on page 47 of replacing "restored" in two places by "restored to the set condition".
- (5) initiate an amendment to IS 9314-2 on FDDI MAC to change the addressing to 48 bits mandatory and 16 bits optional and to delete the unused service primitive.
- (6) progress DIS 9315 on Flexible Disk Drive Interface to the Central Secretariat for final processing and to correct the dimensional errors in the board edge dimensions.
- (7) terminate consideration of DP 9323 on Rigid Disk Interface under project 10.2 in favor of the newer alternative interfaces ESDI and IPI-2 disk.
- (8) progress DIS 9316 on SCSI to the Central Secretariat for final processing.

(9) progress DIS 9317 on Streaming Cartridge and Cassette Tape Drives to the Central Secretariat for final processing.

(10) progress DIS 9318 on Intelligent Peripheral Interface (IPI) - Physical Level to the Central Secretariat for final processing.

(11) progress DIS 9319 on Intelligent Peripheral Interface (IPI) - Device specific command set for magnetic disk drives to the Central Secretariat for final processing.

(12) progress DIS 9320 on Intelligent Peripheral Interface (IPI) - Device generic command set for magnetic and optical disk drives to the Central Secretariat for final processing.

(13) progress DIS 9321 on Intelligent Peripheral Interface (IPI) - Device generic command set for magnetic tape to the Central Secretariat for final processing, providing that the upcoming DIS letter ballot passes without the need for substantial change.

(14) progress the Intelligent Peripheral Interface (IPI) - Device specific command set for magnetic tape (N468) as a DIS.

(15) progress the Enhanced Small Device Interface (ESDI) (N469) as a DIS.

(16) progress the enhanced Small Computer System Interface (SCSI-2) as a DP after its approval by X3T9.

(17) progress the Enhanced Intelligent Peripheral Interface (IPI) - Physical Level as DP 9318-6 after its approval by X3T9.

(18) renumber the family of IPI documents replacing the separate numbers with 9318 followed by a sequential part number as new IPI documents are assigned.

(19) forward Tokyo-9, "International Standardized Profiles for the use of FDDI as LAN and as backbone network between LANs of the 8802 type." proposed New Work Item on ISPs for FDDI, to the JTC 1 secretariat for letter ballot with assignment to SC 13.

(20) close liaison with SC 83 and nominates Prof. Popovic to become liaison officer to SC 83.

(21) Thanks to Japan for hosting the meeting.

Chairman's note: The complete minutes of the ISO/IEC JTC1/SC13 meeting are available on the SCSI Bulletin Board (316-636-8700) in File Area 1.

7. Review of Old Action Items

1. Dan Davies will propose revised wording in the retry counts and algorithms of REQUEST SENSE and MODE SELECT. Complete (see 88-103R1).
2. Harvey Waltersdorf will provide the UL, CSA, VDE listings and the electrical characteristics of 25-mil centerline, 28-AWG ribbon cables.

This item was mostly completed at the August meeting. No further work was done on it. It will be dropped from action item list.

3. Bob Mortensen will take another pass at the wording on Rotational Position Locking and will submit it to the working group for further consideration. Carried over.
4. Jerry Marazas will modify the connector orientation drawing to be more generic and will attempt to get it into a suitable electronic format. Jerry was not present. This action item was dropped as a result of the failed motion during 9.1.
5. John Lohmeyer will revise section 5 to include 88-91 along with the modifications developed in the August meeting. Carried over.
8. Working Group and/or Project Status Reports

8.1 ESDI

8.1.1 ESDI Public Review Comment Resolution

The first public review period on ESDI (BSR X3.170-198X) ended October 3, 1988. Two formal comments were received, one from GSA and one from NCR. There were also several informal comments were received by the task group:

- 1) Registration authority procedure for vendor codes (88-61).
- 2) Revised vendor codes (88-73).
- 3) Correction to spindle motor control (88-74).
- 4) Tom Wicklund's comments (88-89).
- 5) Ciprico/NCR proposal on ESDI timing parameters (88-113).

Dal Allan reported that the comment from GSA was subsequently withdrawn after he sent Mr. Rinehuls a complete copy of the ESDI document. The resolution of these comments was assigned to an ad hoc group which met Monday evening (see X3T9.2/88-131).

All comments were resolved by the ad hoc group. Dal Allan will revise the ESDI document and will send it to John Lohmeyer for the next X3T9.2 mailing and to Bill Burr for the next X3T9 mailing. It is expected that there will be a forwarding motion on ESDI at the December meeting.

8.2 Flexible Disk

Gene Milligan reported for Gary Robinson. The edge connector dimensions for width do not add up correctly. This may be a tolerance issue. Gary Robinson will address this issue and it will be fixed as a editorial item in the document.

Gene suggested that the edge-connector drawings should be checked in other X3T9 documents which may have copied the Flexible Disk drawings.

8.3 SCSI General Working Group (X3T9.2/88-109)

A working group meeting was held August 29-31 in San Jose, CA. Jim McGrath of Quantum hosted the meeting. Dal Allan chaired the meeting and Larry Lamers kept the minutes. There were 45 attendees. Dal Allan reported on the significant actions taken by the working group. Please refer to X3T9.2/88-109 for the meeting minutes (September mailing).

The main topic discussed was the transmission line problems. The alternatives were not attractive. However the issue will not disappear, and the problem is aggravated with the higher transfer rates and the fact that cables are typically of a lower impedance than was assumed in the SCSI standard.

8.4 Fiber Optic Physical Layer Study Group

A fiber optic study group meeting was held September 26-27 at Hewlett Packard in San Jose, CA. Dal Allan chaired the meeting. Dal gave a brief report on the meeting and minutes (see X3T9.2/88-129) will be included in the next mailings from X3T9.2 and X3T9.3.

The fiber optic physical layer project proposal was approved by X3 36 Yes to 1 No. The no vote was from AMP, who wanted connector selection responsibility to go to EIA because they felt that X3T9 could not handle connector issues expeditiously. X3T9.3's response is that they do not want to be dependent on another group's schedule for connector selection.

A set of items was developed as a requirements document model for the group. Three levels of performance and cost were discussed by the group. The initial study activity has been completed and now the group will begin the proposal stage.

The next fiber optic physical layer working group meeting is scheduled for December 1-2, 1988 in Cupertino. Jim Smith at Tandem Computers (408-996-6545) is arranging the meeting.

In response to questions from committee members on where this activity is going with respect to SCSI, Dal Allan responded that the fiber channel is an X3T9.3 activity. He requested more active representation from the SCSI group. He expected that SCSI-3 could reference the fiber channel as an alternative physical configuration.

Chairman's note: X3T9.2 will probably have to develop some documentation to describe how to use the fiber channel physical layer with SCSI. This may be part of the SCSI-3 project or we may elect to submit a separate project proposal for this activity.

8.5 Autoconfiguration SSWG

Paul Boulay led this SSWG which met at various times during the San Jose working group meeting. Jerry Marazas gave an overview of revision 2 of his proposal (88-69R2) and time was spent on developing Jim McGrath's counter-proposal. The SSWG asked Jerry and Jim to identify any changes that should be made in SCSI-2 so that their techniques, if included in

SCSI-3, would have optimal compatibility with SCSI-2 devices.

Paul Boulay gave a brief report of the SSWG activities. Jim McGrath completed his action item in document X3T9.2/88-115.

8.6 Transmission Line SSWG (X3T9.2/88-109)

This SSWG met in San Jose during the general working group meeting. Jeff Stai led the group. Since Jeff was unable to attend the Boston meeting, Dal Allan reported on the SSWG. The SSWG developed three recommendations on what should/could be done about single-ended signal quality:

- 1) All cable used in the system should be 90-132 ohms.
- 2) Reduce the maximum cable length from six meters.
- 3) Provide advice on cable lengths in implementations.

Other more-drastic solutions such as changing the drivers/receivers and termination circuits were deemed unacceptable for SCSI-2 but may be considered under the SCSI-3 project.

Jim Schuessler presented an idea on a method to automatically cut the power to the terminator if the bus is plugged into an old device. This would prevent any of the old drivers from being damaged, but they would get hotter. The proposal does require the re-definition of a signal to terminator sense in the interface. If any old device is connected to the bus then all new devices would cut power to their terminators. The proposed termination circuit would dissipate about 3 watts and thus there is a size consideration for fitting into a terminator block.

8.7 Medium Changers SSWG

Paul Boulay led this SSWG and gave a brief report to the plenary. He is also the editor of this section.

There still is work to be done on this section. The most significant change so far has been to the READ ELEMENT STATUS command. The plan is to complete the work and have a revised document for the Austin working group meeting.

8.8 Hierarchical Filemarks SSWG (X3T9.2/88-107R1)

The group has changed the name of this concept to "Setmarks" and has developed wording for SCSI-2 Rev 6. The idea is to create filemark-like blocks that have different levels or priorities. Setmarks used within a file would have lower priority than those used to delimit a file. A group of related files could be delimited with still higher priority setmarks.

Mike Mattei, substituting for Bill Homans, gave a report on the SSWG. The SSWG developed X3T9.2/88-107 Rev. 1 which was accepted by the plenary for inclusion into SCSI-2 R6.

9. Old Business

9.1 SCSI Device Connector Orientation (X3T9.2/88-80 Rev 2)

Jerry Marazas was not present. Bill Spence nominated Gene Milligan to undertake the action item to provide a drawing of the correct connector orientation. Gene developed three figures during the course of the meeting.

Tuesday morning, Gene Milligan presented the figures on connector orientation with pin 1 in the upper right-hand corner of the connector when viewing the device from the rear of the enclosure. Figure 1 included a suggestion that the power connector be further to the right of the A cable connector. Figure 2 included a suggestion on where the B cable connector should be located (between the A cable connector and the power connector with pin 1 in the upper right). Figure 3 omitted both the power and the B cable connectors.

Dal Allan recommended that the figures also include a suggestion that when mounting such a device vertically, it be rotated so that pin 1 would be oriented up.

Gene Milligan moved and Bob Snively seconded that X3T9.2 accept the first two figures presented by Gene Milligan showing preferred connector orientations but without the power connectors, (including the vertical recommendation), and that X3T9.2 direct the editor to include similar figures with appropriate wording to indicate that this is a suggestion only, not a requirement. The motion failed, 12 in favor and 20 opposed.

9.2 Number of Terminator Power Lines for SCSI-2 (X3T9.2/88-48R1,-77,-87)

The discussion turned to reserving some of the lines in SCSI-2, to allow for future flexibility. There was a general agreement to do this as long as the standard did specify a particular future use. The big problem was what to do with the "reserved" signals; are they open, grounded, passively terminated, actively terminated, or some combination of these.

John Morse moved and Steve Goldman seconded that four lines in the A cable connector be reserved for future use. "Reserved" was to be defined by the conclusion of this plenary meeting.

Bill Spence moved and Bob Snively seconded that the motion be amended to not change any signal definition for the A cable from that specified in SCSI-2 R5. The motion to amend failed, 12 in favor and 16 opposed.

The main motion carried, 14 in favor and 12 opposed.

John Morse moved and John Lohmeyer seconded that pins 23, 24, 27, and 28 in the low-density A cable connector and 12, 14, 37, and 39 in the high-density A cable connector be those "reserved" lines. The motion carried, 9 in favor and 6 opposed.

John Morse moved and John Lohmeyer seconded that "reserved" be defined as open at the devices and ground at the terminator.

Jim McGrath moved and Bob Snively seconded that the motion be amended so that "reserved" be defined as either open or ground (with open recommended) at the device and ground at the terminator. The motion to amend carried, 23 in favor and 2 opposed.

The amended motion carried, 26 in favor and 4 opposed.

The plenary directed the editor to incorporate the necessary wording into SCSI-2 R6.

9.3 Schedule for SCSI-2

John Lohmeyer reported that he and Larry Lamers intend to meet the last week of October to prepare revision 6 of SCSI-2. This document is to be included in the November mailing. Bill Spence had volunteered to make a few copies for the attendees of the November working group meeting so that they can thoroughly review the document. If the changes are not too extensive, then a revision 7 would be prepared from the marked-up copy of revision 6 for forwarding at the December plenary meeting. Of course, any significant changes or unresolved issues would slip this schedule.

Gene Milligan moved and Peter Johansson seconded that upon the termination of the October plenary meeting any new proposal not be considered until SCSI-2 is forwarded. The motion carried, 28 in favor and 4 opposed.

9.4 Review of SCSI-2 Draft Document (X3T9.2/86-109 Rev 5)

John Lohmeyer stated that Ben Driscoll has resigned his position as editor of the scanner section of SCSI-2 since he has left Datacopy. Greg DeRosa who replaces Ben as the Datacopy Alternate has volunteered to be the new scanner section editor. John asked for opinions on whether this section still required a section editor or should it be assigned to the general editor, Larry Lamers. Larry recommended that the scanner model and a glossary should be completed by the section editor prior to assigning the section to him. Larry Lamers will contact Greg DeRosa concerning the development of a model and a glossary for scanner devices and his willingness to be the scanner section editor.

George Penokie made several (mostly editorial) comments on SCSI-2 R5. These comments were reviewed by the plenary meeting attendees and the section editors will make the appropriate corrections.

9.4.1 12-byte LOG SELECT/SENSE (X3T9.2/88-95, 88-132)

The two options recommended by the working group were put to a straw vote:

- a) twelve-byte command descriptor blocks (3 in favor, 11 opposed)
- b) use ten-byte commands with the allocation length in blocks (13 in favor, 4 opposed)

During the meeting, Bob Pentecost developed yet another proposal for doing log parameters in chunks using 10-byte commands (see 88-132).

This document with a few additional changes (88-132 R1) was accepted for inclusion in SCSI-2 R6.

During the discussion it was noticed that page 7-31 paragraph 3 in SCSI-2 R5 references a section that does not exist and should contain a description of time ordering of log entries. Jim McGrath said that the section had existed in the original proposal but may have been lost as it was edited into the draft document. Jim Semenak was assigned an action item to correct this problem.

9.4.2 Rotational Position Locking

As Bob Mortensen and Larry Lamers had not met yet, this item was carried over.

9.4.3 Device Models

The Chairman advised the committee that the following device models are still missing and, ideally, should be completed before the document is forwarded. The following is the list of assignments for model development:

Section 8: Direct Access Devices - Greg Fry
Section 9: Sequential Access Devices - complete
Section 10: Printer Devices - John Lohmeyer
Section 11: Processor Devices - Jeff Stai
Section 12: Write-Once Devices - unassigned
Section 13: CD-ROM Devices - complete
Section 14: Scanner Devices - Larry Lamers to contact Greg DeRosa
Section 15: Optical Memory Devices - Larry Lamers
Section 16: Medium Changer Devices - Paul Boulay
Section 17: Communication Devices - Bob Snively

At the August working group meeting, Dal Allan had suggested that the Direct-Access Device model quite possibly could be developed from a model for rotating storage devices that Bill Burr had written 18 to 24 months previously. John Lohmeyer said he thought this model contained mostly device-level information and may have to be edited extensively before it could be used for SCSI-2. He accepted an action item to obtain this model from Bill Burr.

9.4.4 B Cable Data Transfer Requirements (X3T9.2/88-108 R1)

Bob Snively's document (88-108 R1) was accepted as modified in the meeting for incorporation into SCSI-2 R6.

9.4.5 Generic Error Recovery Page (X3T9.2/88-103 Rev 1)

Since Dan Davies had to leave before this item was discussed, it was remanded to the working group.

9.4.6 What if the initiator fails to negate ATN per Table 5-2?

In revision 4, Table 5-2 was revised to specify that the initiator should negate the ATN signal prior to asserting the ACK signal on the last byte of several messages. This was intended to reduce the total number of messages that must be processed with a single MESSAGE OUT phase. Unfortunately, rev 4 did not say what a target should do if the initiator failed to meet this requirement. George Penokie noticed this problem and suggested that the standard should really specify the correct target response.

John Lohmeyer added a statement to revision 5 on page 5-10 saying the target shall go to the BUS FREE phase (unexpected BUS FREE) if the initiator fails to negate ATN before asserting ACK on the last byte of one of these messages. He also included a [] note soliciting any objections. The San Jose working group felt that this change was sufficiently technical to warrant discussion and a formal vote at the plenary meeting.

John Lohmeyer moved and Bill Spence seconded that the change made to the third paragraph of 5.2.1 be accepted as modified and that the [] note be deleted in SCSI-2 rev 6. The motion carried, 19 in favor and 0 opposed.

9.5 Connector Proposals

9.5.1 AMP (X3T9.2/88-133,134)

Bob Whiteman gave a presentation on the SCSI cable impedance characteristics based on computer simulation and an actual hardware configuration. Bud Reyner, a transmission line specialist for AMP, was present to respond to questions from the committee. See documents X3T9.2/88-133 and -134.

9.5.2 Stewart Stamping Connector Proposal (X3T9.2/88-67,-111,-128)

David Hatch gave a presentation on nonshielded high-density connectors which can be used with 50-mil centerline flat ribbon cable. The ribbon cable is split into two equal width pieces and the cables are terminated one directly on top of the other with the conductors offset by 25-mils. See document X3T9.2/88-136.

Dal Allan moved and Steve Goldman seconded that volunteer organizations initiate testing of the cabling and connector alternatives and that the existing connector and pinout designations be retained unless significant technical problems are uncovered. The motion carried, 25 in favor and 11 opposed.

The following organizations volunteered to participate in the testing: 3M, Adaptec, AMP, DEC, and Technology Forums.

9.5.3 Plating & maximum envelope for connectors -- Amphenol

Mike Wingard of Amphenol requested a recommendation from the committee on what the desired connector envelope is for terminators and cable harness assemblies and how thick the plating should be. Dal Allan recalled that the guideline for connector selection had been 1500 matings minimum. This may be excessive for some applications. There was a short discussion on the topic with the general conclusion that there is no single right answer.

9.6 Format Progress Reporting (X3T9.2/88-124) [Steve Cornaby]

Steve Cornaby stated that the Format Progress reporting feature was not clear and that it was too specific to just one problem. He recommended that this kind of information be made available for other long-duration commands as well. He further suggested that the information be reported in terms of the expected maximum time to complete the command rather than the percentage completion. Several others expressed opinions that Steve had missed the point of what IBM had wished to accomplish through the Format Progress Reporting. No consensus was reached and this item was remanded to the working group for further consideration.

In the meantime, the sense key specific bytes in REQUEST SENSE that relate to format progress reporting should be revised to make it clear that these bytes are only valid following the completion of a FORMAT UNIT command with an Immediate bit of one. This action item was assigned to Jim Semenak.

10. New Business

10.1 Review of new documents

Asynchronous Event Notification Revision (X3T9.2/88-065 R3) [Paul Boulay]

This document was accepted for incorporation into SCSI-2 R6.

WDTR Disable Residue function (X3T9.2/88-116) [Jeff Stai]

The committee requested that this proposal be re-written as a mode parameter instead of a modifier bit of the WDTR message. The revised proposal was remanded to the working group.

Data Pointer (X3T9.2/88-120) [Bill Spence]

Peter Johansson moved and Dal Allan seconded that X3T9.2/88-120 be accepted for inclusion in SCSI-2 R6. The motion carried, 10 in favor, 3 opposed.

Disconnect Control via MODE SELECT (X3T9.2/88-121 R0) [Paul Boulay]

This document was accepted for incorporation into SCSI-2 R6.

CHANGE DEFINITION vs. INQUIRY Inconsistency (X3T9.2/88-122) [Skip Jones]

This document was remanded to the working group since Skip was not present to defend it.

Error Handling Action Codes (X3T9.2/88-127) [G. Penokie]

The committee agreed to assign this as a SCSI-3 work item.

10.2 Agenda for Austin Working Group

The following agenda items were identified. If there is any extra time available, then SCSI-3 items will be considered.

1. Detailed Review of SCSI-2 Revision 6 in preparation for forwarding.
2. Format Progress Reporting (X3T9.2/88-124) [Steve Cornaby]
3. Rotational Position Locking [Bob Mortensen]
4. Medium Changers [Paul Boulay]
5. Generic Error Recovery Page (X3T9.2/88-103 Rev 1) [Dan Davies]
6. WDTR Disable Residue function (X3T9.2/88-116) [Jeff Stai]
7. CHANGE DEFINITION vs. INQUIRY Inconsistency (X3T9.2/88-122) [Skip Jones]
8. TERMINATE IMMEDIATE and REPORT BLOCKS TRANSFERRED messages [Steve Goldman]

10.3 Alternative Single-ended terminator [Christian Mollard]

Christian Mollard suggested changing the single-ended termination resistors to 180/390 ohm values and using a special 1N5818 Schottky diode to achieve a better impedance match without requiring any changes to the drivers or receivers. The committee was receptive to this idea and asked Christian to develop a complete proposal. See enclosure (5).

10.4 Terminate Immediate

Steve Goldman gave a presentation on the need for a TERMINATE IMMEDIATE message when implementing large caches using SCSI direct-access devices. The TERMINATE IMMEDIATE message would request the target to terminate the current command (presumably a read or write command) at the end of the current logical block. The target would return a REPORT BLOCKS TRANSFERRED message indicating the actual number of logical blocks transferred. Drive-level interfaces such as ESDI have this capability and Steve suggested that the addition of this capability would permit usage of SCSI drives in certain caching applications. Some alternative approaches (such as command queuing) were also briefly discussed.

Steve Goldman moved and Tom Wicklund seconded that X3T9.2 consider adding a TERMINATE IMMEDIATE message and a REPORT BLOCKS TRANSFERRED message to

SCSI-2. The motion carried, 19 in favor and 0 opposed. This topic is to be considered at the November working group meeting.

11. Review of Action Items

1. Bob Mortensen will take another pass at the wording on Rotational Position Locking and will submit it to the working group for further consideration.
2. John Lohmeyer will revise section 5 to include 88-91 along with the modifications developed in the August meeting.
3. Gary Robinson will address the edge connector dimension issue in the Flexible Disk standard (X3.80R-198X).
4. Jim Semenak will correct page 7-31 paragraph 3 in SCSI-2 R5 which references a section that does not exist and should contain a description of time ordering of log entries.
5. Jim Semenak will clarify the format-in-progress part of the sense-key specific bytes in the REQUEST SENSE data wording so that it is clear that it only applies to the FORMAT UNIT command with the Immediate bit set to one.
6. Christian Mollard will develop a complete proposal on changing the termination network for single-ended systems.
7. Dal Allan will revise the ESDI dpANS per the results of the ad hoc meeting (see 88-131) and he will forward master copies to John Lohmeyer for the X3T9.2 mailing and to Bill Burr for the X3T9 mailing.
8. Larry Lamers will contact Greg DeRosa concerning the development of a model and a glossary for scanner devices and his willingness to be the scanner section editor.
9. John Lohmeyer will obtain Bill Burr's model on rotating mass storage devices for possible use in developing the SCSI-2 model for direct-access devices.

12. Meeting Schedule

The next meeting of X3T9.2 will be December 5-6, 1988 at the Hyatt Islandia in San Diego (619-224-1234) hosted by Cipher. Please mention "X3T9/Cipher" when making reservations to receive the special room rate of \$80.00 single or double occupancy. The cut-off date for room reservations is November 21, 1988.

The X3T9.2 plenary meeting schedule for 1989 is:

Date	Location	Host
February 20-21, 1989	Austin, TX	Motorola
April 24-25, 1989	St. Petersburg Beach, FL	AMP
June 19-20, 1989	San Jose, CA	AMD
August 21-22, 1989	Denver	DEC
October 16-17, 1989	Research Triangle Park, NC	IBM
December 4-5, 1989	San Diego, CA	NCR

12.1 General Working Group Schedule for 1989

The X3T9.2 general ad-hoc meeting schedule for the remainder of 1988 and 1989 is:

Date	Location	Host
November 7-9, 1988	Austin, TX	Bill Spence
January 9-11, 1989	Irvine, CA	Jeff Stai
March 6-8, 1989	San Jose, CA	Jim McGrath {tentative}
May 8-10, 1989	Wichita, KS	John Lohmeyer {tentative}
July 10-12, 1989	?	?
September 6-8, 1989	?	?
Oct 30 - Nov 1, 1989	?	?

13. Adjournment

The meeting was adjourned at 5:11 p.m. on Tuesday, October 11, 1988.

Meeting Attendees - Enclosure (1)

Name	Status	Organization
Mr. Robert C. Herron	A	3M Company
Mr. Robert N. Snively	P	Adaptec, Inc.
Mr. Nicos Syrimis	P	Advanced Micro Devices
Mr. Charles Brill	P	AMP, Inc.
Mr. Bob Whiteman	A	AMP, Inc.
Mr. C. Edward Reynolds	A	AMP, Inc.
Mr. Emerson (Bud) Reyner	O	AMP, Inc.
Mr. Michael Wingard	P	Amphenol Corp.
Mr. Robert Wiggin	O	Amphenol Corp.
Mr. Jan V. Dedeck	P	Ancot Corp.
Mr. George Reichenberg	A	Aspen Peripherals
Mr. James J. Semenak	P	AT&T
Mr. Christopher J. Rhea	O	AT&T
Mr. James Keene	O	Belden Wire & Cable
Mr. Christian Mollard	O	BULL Systems
Mr. David Barnum	P	Burndy Corp.
Mr. Heinz Piorunneck	A	Burndy Corp.
Mr. Anthony Colozzi	S	Burndy Corp.
Mr. John Guennewig	P	Cinch Connector
Mr. Al Consiglio	A	Cinch Connector
Mr. Dan Davies	P	Cipher Data Products, Inc.
Mr. Bill Winterstein	P	Ciprico Inc.
Mr. Tom Wicklund	A	Ciprico Inc.
Mr. Robert Kellert	P	Cirrus Logic Inc.
Mr. Peter Johansson	P	Congruent Software, Inc.
Mr. George Battrick	O	Crosfield Electronics Ltd.
Ms. Kathy Lifson	O	CW Industries
Mr. George Zisk	O	CW Industries
Mr. Bart Raudebaugh	P	Cygnet Systems
Mr. Sam Pendleton	A	Data General Corp.
Mr. Sam Weng	A	Datacopy Corp.
Mr. John Morse	A	Digital Equipment Corp.
Mr. Charles Monia	O	Digital Equipment Corp.
Mr. Duncan McDonald	P	Distributed Logic Corp.
Mr. Gerald Maurer	P	Emulex Corp.
Mr. I. Dal Allan	P	ENDL
Mr. Bill Duean	O	Exabyte Corp.
Mr. Robert Liu	P	Fujitsu America, Inc.
Mr. Bob Pentecost	P	Hewlett Packard Co.
Mr. Kurt Chan	A	Hewlett Packard Co.
Mr. Rick Kato	S	Hewlett Packard Co.
Mr. Kenji Nishimura	O	Hitachi America, Ltd.
Mr. Toshiaki Kojima	O	Hitachi America, Ltd.
Mr. Fielding S. Tabb	O	Hitachi Cable Manchester
Mr. Timothy D. Jones	O	Hitachi Cable Products
Mr. Sherman Black	O	Hitachi Computer Products
Mr. David McFadden	P	Honda Connector
Mr. Hiroshi Minawa	A	Honda Connector
Mr. George Penokie	P	IBM Corp.
Mr. Gene Milligan	P	IMPRIMIS/CDC

Meeting Attendees - Enclosure (1)

Name	Status	Organization
Mr. Craig Scott	A	Interphase Corp.
Mr. Geoff Barton	A	Iomega Corp.
Mr. Cliff Kahn	A	ITT Cannon
Mr. Alan Ebright	P	Laserdrive Ltd.
Mr. Paul Boulay	A	LMS-OSD
Mr. Mike Mattei	V	LMS-TSD
Mr. Robert Bellino	O	Madison Cable Con.
Mr. Bob Mortensen	P	Maxtor Corp.
Mr. Stephen Cornaby	P	Micropolis Corp.
Mr. John Mangan	A	Miniscribe Corp.
Mr. Kim Ryal	A	Miniscribe Corp.
Mr. Daniel E. Moczarny	P	Mitsubishi Electronics Amer
Mr. William E. Burr	P	Nat. Inst. of Stnds. & Tech.
Mr. James Schuessler	P	National Semiconductor
Mr. John Lohmeyer	P	NCR Corp.
Mr. Bret Weber	V	NCR Corp.
Mr. Bruce Anderson	P	NEC I.S.
Mr. David Filpus	P	Northern Telecom, Inc.
Mr. Jim Harper	P	Optotech, Inc.
Mr. Michael Fitzpatrick	P	Prime Computer, Inc.
Mr. James McGrath	P	Quantum Corp.
Dr. Tetsuro Motoyoma	P	Ricoh Corporation
Mr. Ron Schlitzkus	A	Scientific Micro Systems
Mr. Philip O'Leary	O	Scientific Micro Systems
Mr. D. Michael Robinson	P	Seagate Technology
Mr. Dean Konell	P	Siemens Info. Systems, Inc.
Mr. Cornelius van der Sel	O	Siemens, Communication Group
Mr. Aziz Makhani	O	Silicon Systems
Mr. Lawrence J. Lamers	P	Sony Corp. of America
Mr. David A. Hatch	P	Stewart Connector Systems
Mr. Dennis Appleyard	P	Storage Technology Corp.
Mr. Steve Kohalmi	O	Stratus Computer
Mr. Paul Rikkonen	A	Sun Microsystems, Inc.
Mr. Curtis A. Ridgeway	O	Sun Microsystems, Inc.
Mr. Tom Gardner	P	Technology Forums, Ltd.
Mr. D. W. Spence	P	Texas Instruments
Mr. Harvey Waltersdorf	P	Thomas & Betts
Mr. Ernie Derkas	O	UNISYS
Mr. David Griffith	O	Wang Laboratories
Mr. Anil Gupta	A	Western Digital
Mr. Martin Pullam	P	Winchester Electronics

Status Key:

P Principal
 A Alternate
 O Observer
 V Visitor
 N,S Special Interest

Oct 19, 1988 - X3T9.2 Membership Changes - Enclosure (2)

Mr. Robert C. Herron 3M Company Bldg. 141-3S-03 P.O. Box 2963 Austin, TX 78769-2963	Address and Phone change A (512) 984-6807
Mr. Jerry L. Amstutz A.C.T./Shugart 2931 La Jolla Anaheim, CA 92806	Changed to Observer Status for non-attendance O (714) 632-9230
Mr. William A. Horton Adaptec, Inc. 580 Cottonwood Dr. Milpitas, CA 95035	Terminated per Snively T (408) 432-8600
Mr. Nicos Syrimis Advanced Micro Devices 901 Thompson Place, MS 70 Sunnyvale, CA 94088	Replaces Polster as Principal (was Alternate) P (408) 749-2513
Mr. Mitch Kane Advanced Micro Devices 901 Thompson Place, MS 70 Sunnyvale, CA 94088	New Alternate A (408) 749-4828
Mr. Scott Smyers Advanced Micro Devices 901 Thompson Place, MS 70 Sunnyvale, CA 94088	New Alternate A (408) 749-2503
Mr. Moshe Segal Advanced Micro Devices Mail Stop 70 901 Thompson Pl. Sunnyvale, CA 94086	Mail returned -- no longer at this address T (408) 732-2400
Mr. Govind Kamath Advanced Micro Devices 2130 Woodward St. Mail Stop 536 Austin, TX 78744	Terminated per Syrimis T (512) 488-9817

Oct 19, 1988 - X3T9.2 Membership Changes - Enclosure (2)

Mr. Jochen Polster Replaced by Syrimis
Advanced Micro Devices
901 Thompson Place, MS 70 R (408) 749-2479
Sunnyvale, CA 94088

Mr. Emerson (Bud) Reyner New Observer
AMP, Inc.
P.O. Box 3608 O (717) 986-7946
Harrisburg, PA 17105

Mr. Robert Wiggin New
Amphenol Corp.
720 Sherman Ave. O
Hamden, CT 06514

Mr. Chuck Fannin Corrected spelling of "Fannin"
Archive Corp.
1650 Sunflower Ave. A (714) 966-2274
Costa Mesa, CA 92626

Mr. Christopher J. Rhea New Observer
AT&T
1100 E. Warrenville Rd. O (312) 979-8179
Room 1F455
Naperville, IL 60566

Mr. James Keene New Observer
Belden Wire & Cable
P.O. Box 1980 O (317) 983-5200
Richmond, IN 47777

Mr. William S. Cover Terminated per Guennewig
Cinch Connectors
1501 Morse Ave. T (312) 981-6301
Elk Grove Village, IL 60007

Mr. George Battrick Phone number changed
Crosfield Electronics Ltd.
Three Cherry Trees Lane O (0442) 230000
Hemel Hempstead HP2 7RH
England

Oct 19, 1988 - X3T9.2 Membership Changes - Enclosure (2)

Mr. George Zisk
CW Industries
130 James Way
Southampton, PA 18966

New

O (215) 355-7080

Ms. Kathy Lifson
CW Industries
130 James Way
Southampton, PA 18966

New Observer

O (215) 355-7080

Mr. Dave Cressman
Data General Corp.
Technology Dr.
Durham, NH 03824

Terminated per Pendleton

T

Mr. Sam Weng
Datacopy Corp.
1215 Terra Bella Ave.
Mtn. View, CA 94043

New Alternate

A (415) 965-7900

Mr. Ben Driscoll
Datacopy Corp.
1215 Terra Bella Ave.
Mtn. View, CA 94043

Replaced by Sam Weng

R (415) 965-7900

Mr. John Morse
Digital Equipment Corp.
Mail Stop ML05-2/G1
146 Main Street
Maynard, MA 01754

Mail Stop Changed

A (617) 493-5801

Mr. Edward A. Gardner
Digital Equipment Corp.
301 Rockrimmon Blvd., S.
CXO 1-2/N26
Col. Springs, CO 80919

Mail Stop changed

O (719) 548-2247

Mr. Charles Monia
Digital Equipment Corp.
100 Nickeson Rd.
Marlboro, MA 01777

New Observer

O

Oct 19, 1988 - X3T9.2 Membership Changes - Enclosure (2)

Mr. Bill Duean
Exabyte Corp.
1745 38th St.
Boulder, CO 80027

New Observer
O (303) 442-4333

Mr. Bob Pentecost
Hewlett Packard Co.
Disc Memory Div.
11413 Chinden Blvd, MS 216
Boise, ID 83707

Status changed -- was Observer (Mail Stop chang
P (208) 323-3312

Mr. Kurt Chan
Hewlett Packard Co.
8000 Foothills Blvd.
Roseville, CA 95678

Status changed -- was Observer
A (916) 785-5621

Ms. Elen Hunt
Hewlett Packard Co.
700 71st Ave.
Greeley, CO 80634

Status changed -- was Alternate
O (303) 350-4551

Mr. Pat Walker
Hewlett Packard Co.
Disc Memory Div.
11413 Chinden Blvd, MS 219
Boise, ID 83707

Status Changed -- was Principal
O (208) 323-2418

Mr. Toshiaki Kojima
Hitachi America, Ltd.
950 Elm Ave. Suite 300
San Bruno, CA 94066

New Observer
O (415) 872-1902

Mr. Timothy D. Jones
Hitachi Cable Products
1800 E. Imhoff Rd.
Norman, OK 73071

New Observer
O (405) 360-5500

Mr. Hiroshi Minawa
Honda Connector
% Mhotronics
444 Lake Cook Rd., Suite 8
Deerfield, IL 60015

New Alternate
A (312) 945-5600

Oct 19, 1988 - X3T9.2 Membership Changes - Enclosure (2)

Mr. Paul Wassenberg Changed status from Principal to Alternate
Micropolis Corp. A (818) 709-3318
21211 Nordhoff St.
Chatsworth, CA. 91311

Mr. William E. Burr Organization Changed name from "Nat. Bureau of
Nat. Inst. of Stnd. & Tech. Room A-216, Bldg. 225 P (301) 975-2914
Room A-216, Bldg. 225 Gaithersburg, MD 20899

Oct 19, 1988 - X3T9.2 Membership Changes - Enclosure (2)

Mr. Bruce Anderson Corrected spelling of "Boxborough"
NEC I.S.
155 Swanson Rd.
Boxborough, MA 01719
P (508) 653-4721

Ms. Joan French Corrected spelling of "Boxborough"
NEC Systems Laboratory
1414 Massachusetts Ave.
Boxborough, MA 01719
O (508) 262-2627

Mr. Jim Harper Re-instated as Principal
Optotech, Inc.
740-770 Wooten Rd.
Colorado Springs, CO 80915
P (719) 570-7500

Mr. Philip O'Leary New Observer
Scientific Micro Systems
339 N. Bernardo Ave.
Mountain View, CA 94039
O (415) 964-5700

Mr. Masayuki Yokoyama Replaces Fonesca
Sony Corp. of America
655 River Oaks Parkway
San Jose, CA 95134
A (408) 432-0190

Mr. Rafael Orsini Terminated per Lamers
Sony Corp. of America
15 Essex Rd.
Paramus, NJ 07652
T (201) 368-5151

Mr. Sergio Fonesca Replaced by Yokoyama
Sony Corp. of America
1 Sony Dr.
Park Ridge, NJ 07656
R (201) 930-6464

Mr. Michael O'Donnell Jeopardy letter returned -- "unable to locate a
Storage Technology Corp.
Mail Drop 91
2270 South 88th St.
Louisville, CO 80028
T

Oct 19, 1988 - X3T9.2 Membership Changes - Enclosure (2)

Mr. Curtis A. Ridgeway New Observer
Sun Microsystems, Inc.
2550 Garcia Ave.
Mountain View, CA 94043 O (415) 336-2226

Mr. Len Chansky Replaces H. Pass
Terminal Data Corp.
2800 N. Madgra Rd.
Simi Valley, CA 93065 O (805) 529-1500 x308

Mr. Herman Pass Replaced by Chansky
Terminal Data Corp.
2800 N. Madgra Rd.
Simi Valley, CA 93065 R (805) 584-0500

Mr. Karl Kwiat Principal and Alternate swapped
Viking Connectors
21001 Nordhoff St.
Chatsworth, CA 91311 P (818) 341-4330

Mr. Peter Kurbikoff Principal and Alternate swapped
Viking Connectors
21001 Nordhoff St.
Chatsworth, CA 91311 A (818) 341-4330

Mr. Anil Gupta Replaces D'Souza
Western Digital
2445 McCabe Way
Irvine, CA 92714 A (714) 474-2033 x3126

Mr. Marc Nussbaum Terminated per Stai
Western Digital
2445 McCabe Way
Irvine, CA 92714 T

Mr. Rudy Goetz Terminated per Stai
Western Digital
2445 McCabe Way
Irvine, CA 92714 T (714) 474-2033

Oct 19, 1988 - X3T9.2 Membership Changes - Enclosure (2)

Mr. Marshal Lee Terminated per Stai
Western Digital
2445 McCabe Way
Irvine, CA 92714 T (714) 474-2033 x2432

Mr. Ken D'Souza Replaced by Gupta
Western Digital
2445 McCabe Way
Irvine, CA 92714 R (714) 474-2033

Mr. Martin Pullam New Principal
Winchester Electronics
400 Park Road
Watertown, CT 06795 P (203) 274-8891 x366

Mr. M. Perugini New Alternate
Winchester Electronics
400 Park Road
Watertown, CT 06795 A (203) 274-8891

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
Mr. Anthony Kozlowski	P	3M Company	3M Center	Bldg. 236-GH-06	St. Paul, MN 55144	(612) 733-7063	(612) 733-4707
Mr. Robert C. Herron	A	3M Company	Bldg. 141-3S-03	P.O. Box 2963	Austin, TX 78769-2963	(512) 984-6807	
Mr. John Knudson	S	3M Company	11209 Metric Blvd, 502-1N-14	Austin, TX 78769-2963		(512) 834-5723	
Mr. Bob Kuhl	S	3M Company	P.O. Box 2963 502-IN-14	Austin, TX 78769-2963		(512) 834-6703	
Mr. Jerry L. Amstutz	O	A.C.T./Shugart	2931 La Jolla	Anaheim, CA 92806		(714) 632-9230	
Mr. Robert N. Snively	P	Adaptec, Inc.	691 S. Milpitas Blvd.	Milpitas, CA 95035		(408) 945-6789	(408) 262-2533
Mr. Robert R. Williamsen	A	Adaptec, Inc.	580 Cottonwood Dr.	Milpitas, CA 95035		(408) 432-8600	
Mr. Nicos Syrimis	P	Advanced Micro Devices	901 Thompson Place, MS 70	Sunnyvale, CA 94088		(408) 749-2513	
Mr. Mitch Kane	A	Advanced Micro Devices	901 Thompson Place, MS 70	Sunnyvale, CA 94088		(408) 749-4828	
Mr. Scott Smyers	A	Advanced Micro Devices	901 Thompson Place, MS 70	Sunnyvale, CA 94088		(408) 749-2503	
Mr. William J. Casey	O	Advanced Storage Concepts	10855 Rockley Road	Houston, TX 77099		(713) 879-4090	
Mr. Koen Van de Poel	S	Agfa Gevaert EBS	Mechelsesteenweg 30	B-2520 Edegem	Belgium	3-444.62.23	
Mr. Don Stevenson	S	Alcyon	P.O. Box 4576	Carlsbad, CA 92008		(619) 587-1155	
Mr. Steve Caldara	O	Alliant Computer Systems	One Monarch Drive	Littletton, MA 01460			
Mr. H. Dorris	O	American Bell	Headquarters Plaza - W	1 Speedwell Av Rm 0966W	Morristown, NJ 07960	(201) 898-2234	
Mr. Charles Brill	P	AMP, Inc.	Mail Stop 210-20	P. O. Box 3608	Harrisburg, PA 17105	(717) 561-6198	
Mr. C. Edward Reynolds	A	AMP, Inc.	P.O. Box 3608 M/S 26-17	Harrisburg, PA 17105		(717) 780-6558	
Mr. Bob Whiteman	A	AMP, Inc.	P.O. Box 3608 M/S 26-17	Harrisburg, PA 17105		(717) 780-7481	
Mr. John H. Endsley	O	AMP, Inc.	Mail Stop 210-20	P.O. Box 3608	Harrisburg, PA 17105	(717) 561-6199	
Mr. Edward Marsh	O	AMP, Inc.	3800 Reidsville Rd., MS 79-27	Winston-Salem, NC 27102		(919) 996-6049	
Mr. Emerson (Bud) Reyner	O	AMP, Inc.	P.O. Box 3608	Harrisburg, PA 17105		(717) 986-7946	
Mr. Michael Wingard	P	Amphenol Corp.	Endicott Operations	20 Valley St.	Endicott, NY 13760	(607) 786-4241	
Mr. William R. Sopchak	A	Amphenol Corp.	Endicott Operations	20 Valley St.	Endicott, NY 13760	(607) 786-4370	
Mr. Robert Wiggin	O	Amphenol Corp.	720 Sherman Ave.	Hamden, CT 06514			
Mr. William Dollar	O	AMPRO Computers, Inc.	67 E. Evelyn Ave.	Mtn. View, CA 94041			
Mr. Rick Lehrbaum	O	AMPRO Computers, Inc.	67 E. Evelyn Ave.	Mtn. View, CA 94041		(415) 962-0230	
Mr. Nick Terry	O	Anamartic Ltd.	Milton Hall	Milton, Cambridge	CB4 4AE England	0223 862 833	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
Mr. Jan V. Dedek	P	Ancot Corp.	1755 E. Bayshore Rd.	Suite 18A	Redwood City, (415) 363-0667 CA 94063		
Mr. Harlan Andrews	O	Apple Computer	Mail Stop 22-AA	20525 Mariani Ave.	Cupertino, CA (408) 973-6430 95014		
Mr. Jeff Chen	O	Apple Computer	Mail Stop 22-AA	20525 Mariana Ave.	Cupertino, CA (408) 973-2815 95014		
Mr. Conrad Chen	S	Apple Computer	Mail Stop 22AA	20525 Mariani Ave.	Cupertino, CA (408) 973-6316 95014		
Mr. Ali Khosrowpour	O	Applied Data Communications	14272 Chambers Rd.	Tustin, CA 92680		(714) 731-9000	
Mr. Randy Sprague	O	Applied Microsystems Corp.	5020 148th Ave. N. E. P. O. Box C-1002		Redmond, WA 98073-1002	(202) 882-2000	
Mr. Louis C. Domshy	P	Archive Corp.	1650 Sunflower Ave.	Costa Mesa, CA 92626		(714) 966-7317	
Mr. Chuck Fannin	A	Archive Corp.	1650 Sunflower Ave.	Costa Mesa, CA 92626		(714) 966-2274	
Mr. Ken Post	A	Archive Corp.	1650 Sunflower Ave.	Costa Mesa, CA 92626		(714) 966-7360	
Mr. Bob Richmond	A	Archive Corp.	1650 Sunflower Ave.	Costa Mesa, CA 92626		(714) 641-0279	
Mr. Kim B. Le	P	Aspen Peripherals	1351 S. Sunset St.	Longmont, CO 80501		(303) 678-0808	
Mr. George Reichenberg	A	Aspen Peripherals	1351 S. Sunset St.	Longmont, CO 80501		(303) 678-0808	
Mr. Raymond Lee	O	AST Research, Inc.	2121 Alton Ave.	Irvine, CA 92714		(714) 863-1333 x6001	
Mr. James J. Semenak	P	AT&T	1100 E. Warrenville Rd.	Room 2A-138	Naperville, IL 60566	(312) 979-7981	
Mr. David Harms	A	AT&T	1100 E. Warrenville Rd.	Rm 1W 2C-427	Naperville, IL 60566	(312) 979-0159	
Allen Haney	O	AT&T	1100 E. Warrenville Rd.	Room 2F-232	Naperville, IL 60566	(312) 979-8135	
Mr. Joe Lawlor	O	AT&T	1100 E. Warrenville Rd.	Rm 1W 2C-435	Naperville, IL 60566	(312) 979-0133	
Mr. Larry Marak	O	AT&T	Dept 700420	777 North Blue Parkway	Lee's Summit, MO 64063	(816) 251-4538	
Mr. Philip J. Puglisi	O	AT&T	Dept. 240570	777 N. Blue Pkwy.	Lee's Summit, MO 64063	(816) 251-5189	
Mr. Christopher J. Rhea	O	AT&T	1100 E. Warrenville Rd.	Room 1F455	Naperville, IL 60566	(312) 979-8179	
SCANDOC	O	Attn: F2009-ST	5827 Columbia Pike	Suite 306	Falls Church, VA 22041		
Mr. Don Stephenson	O	Aura Systems	3548 Starboard Circle	Oceanside, CA 92054		(619) 722-5146	
Mr. Clinton Ballard	P	Ballard Synergy Corp.	10601 S. DeAnza,	#212 Cupertino, CA 95014		(408) 257-8844 (408) 257-8913	
Mr. Gregory Fry	A	Ballard Synergy Corp.	10601 S. DeAnza Blvd.	Cupertino, CA 95014 #212		(408) 257-8844 (408) 257-8913	
Ms. Diane T. Ballard	O	Ballard Synergy Corp.	10601 S. DeAnza,	#212 Cupertino, CA 95014		(408) 257-8844 (408) 257-8913	
Mr. James Keene	O	Belden Wire & Cable	P.O. Box 1980	Richmond, IN 47????		(317) 983-5200	
Mr. Michael Churma	O	Bell and Howell	5700 Lombardo Center	Suite 220, Center Bldg	Seven Hills, OH 44131	(216) 642-9060	
Mr. Michael C. Muma	O	Boeing Computer Services	P.O. Box 24346 M/S 6R-24	Seattle, WA 98124-0346			
Mr. Guy Prival	O	Bull Peripheral	766 San Aleso	Sunnyvale, CA 94086		(408) 745-0855	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
Mr. Christian Mollard	O	BULL Systems Corp.	Rue Jean Jaures	Les Clayes Sous Bois	FRANCE	78340 134627128	
Mr. David Barnum	P	Burndy Corp.	311 Greenhill Road	Madison, CT 06443		(203) 852-6062	(203) 852-6227
Mr. Heinz Piorunneck	A	Burndy Corp.	Richards Ave.	Norwalk, CT 06856		(203) 852-8480	(203) 852-6227
Mr. Anthony Colozzi	S	Burndy Corp.	Richards Ave.	Norwalk, CT 06856		(203) 852-6224	
Mr. Kirk Hollinsworth	O	Cable and Computer Technology	1560 S. Sinclair St.	Anaheim, CA 92806			
Mr. Curt Ridgeway	O	Cable and Computer Technology	1560 S. Sinclair St.	Anaheim, CA 92806		(714) 937-1341	
Mr. John Contreras	O	Caliper	19701 S. Vermont Ave.	Torrance, CA 90502		(213) 538-1030	
Ms. Kathleen McMillian	L	CBEMA (X3 Secretariat)	311 First St., N. W.	Suite 500	Washington, DC 20001	(202) 737-8888	
Mr. Vince Zappia	O	Century Data Systems	1270 II. Kraemer Blvd.	Anaheim, CA 92806		(714) 99-2623	
Mr. Ron Sutton	O	Cherokee Data Systems, Inc.	1880 S. Flatiron Court	Suite H	Boulder, CO 80301		
Mr. John Guennewig	P	Cinch Connector	1501 Morse Avenue	Elk Grove Village, IL 60007		(312) 981-6070	(312) 981-6132
Mr. Al Consiglio	A	Cinch Connector	1501 Morse Ave.	Elk Grove Village, IL 60007		(312) 981-4298	(312) 981-6132
Mr. Bob Pontone	O	Cinch Connector	1501 Morse Ave.	Elk Grove Village, IL 60007		(312) 981-6344	
Mr. Dan Davies	P	Cipher Data Products, Inc.	10101 Old Grove Rd.	Mail Stop D18	San Diego, CA 92138	(619) 578-9100	(619) 549-8037
Mr. David Thomas	A	Cipher Data Products, Inc.	10101 Old Grove Rd.	Mail Stop D9	San Diego, CA 92138	(619) 578-9100	
Mr. Steve Crompton	S	Cipher Data Products, Inc.	10101 Old Grove Rd.	Mail Stop D-4	San Diego, CA 92131	(617) 671-3333	
Mr. Ron Fenn	S	Cipher Data Products, Inc.	10101 Old Grove Rd.	San Diego, CA 92138		(619) 578-9100	
Mr. Neal Foxworthy	S	Cipher Data Products, Inc.	10101 Old Grove Rd.	San Diego, CA 92138		(619) 578-9108	
Mr. Ishtiyaq Syed	P	Cipher/Optimem	297 N. Bernardo Ave.	Mountain View, CA 94043		(415) 961-1800	x804
Ms. Beth Stephens	A	Cipher/Optimem	297 N. Bernardo Ave.	Mountain View, CA 92138		(415) 961-1800	(415) 961-8913
Mr. Bill Winterstein	P	Ciprico Inc.	2955 Xenium Ln.	Plymouth, MN 55441		(612) 559-2034	
Mr. Tom Wicklund	A	Ciprico Inc.	2955 Xenium Ln.	Plymouth, MN 55441		(612) 559-2034	
Mr. Robert Kellert	P	Cirrus Logic Inc.	1463 Centre Pointe Drive	Milpitas, CA 95035		(408) 945-8305	x225
Mr. Joe Chen	A	Cirrus Logic Inc.	1463 Centre Pointe Drive	Milpitas, CA 95035		(408) 945-8300	
Mr. Lam Dang	A	Cirrus Logic Inc.	1463 Centre Pointe Drive	Milpitas, CA 95035		(408) 945-8300	
Mr. Bill Clark	O	Clark Assoc., Inc.	100 Arapahoe Ave.	Suite 10	Boulder, CO 80302		
Ms. Judy Williams	L	Classic Conferences Inc.	#303-1493 Beach Park Blvd.	Foster City, CA 94404		(415) 349-5484	
Mr. Ken Bush	O	Compaq Computer Corp.	20555 FM 149	Houston, TX 77070		(612) 789-1694	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
Mr. R. A. Stokken	O	Compugraphic Corp.	200 Ballardvale St.	Wilmington, MA 01877		(617) 658-5600	
Mr. Ray Gill	S	Compuscan, Inc.	900 Huyler St.	Teterboro, N. J. 07608	x349	(201) 288-6001	
Mr. Richard P. Lenardon	S	Computer Peripherals, Inc.	Tape Products Div.	2621 Van Buren Av.	Norristown, PA 19403	(215) 666-4645	
Mr. Peter Johansson	P	Congruent Software, Inc.	3998 Whittle Ave.	Oakland, CA 94602		(415) 531-5472	
Mr. Thomas A. Fiers	O	Connor Peripherals, Inc.	P. O. Box 479	Longmont, CO 80501		(303) 651-2881	
Mr. Steve Finch	O	Consultant	21581 Via Invierno	Lake Forest, CA 92630		(714) 458-8099	
Mr. Roger Cummings	O	Control Data Canada Ltd.	1855 Minnesota Court	Mississauga Ontario L5N 1K7		(416) 826-8640	
Mr. Douglas C. Johnson	O	Control Data Corp.	Data Sys. Roseville Div.	2401 North Fairview Ave.	St. Paul, MN 55113		
Mr. Wayne Sanderson	O	Control Data Corp.	ARH293	4201 N. Lexington Ave.	St Paul, MN 55126	(612) 482-2712	
Mr. Michael E. Galyon	O	Control Technology, Inc.	P.O. Box 59003	5734 Middlebrook Pike	Knoxville, TN 37950-9003		
Mr. John Stine	S	CPI	Valley Forge Corp. Cntr.	2621 Van Buren Av.	Norristown, PA 19403	(215) 666-5000	
Mr. Robert Knight	O	CPT Corp.	8100 Mitchel Rd.	P. O. Box 295	Minneapolis, MN 55440	(612) 937-8000	
Ms. Lisa Long	O	CPT Corp.	8100 Mitchel Rd.	P. O. Box 295	Minneapolis, MN 55440	(612) 937-8000	
Mr. George Battrick	O	Crosfield Electronics Ltd.	Three Cherry Trees Lane	Hemel Hempstead HP2 7RH	England	(0442) 230000	(0442) 232301
Ms. Kathy Lifson	O	CW Industries	130 James Way	Southampton, PA 18966		(215) 355-7080	
Mr. George Zisk	O	CW Industries	130 James Way	Southampton, PA 18966		(215) 355-7080	
Mr. Bart Raudebaugh	P	Cygnets Systems	601 West California Ave.	Sunnyvale, CA 94086-4831		(408) 773-0770	(408) 733-3358
Mr. Greg Green	P	Data General Corp.	Technology Dr.	Durham, NH 03824		(603) 862-6250	
Mr. Mark Lippitt	A	Data General Corp.	Technology Dr.	Durham, NH 03824			
Mr. Sam Pendleton	A	Data General Corp.	Technology Dr.	Durham, NH 03824		(603) 862-6243	
Mr. Scott Solomon	O	Data General Corp.	4400 Computer Dr. F213	MS Westboro, MA 01581		(617) 870-9785	
Mr. Charles DiChiara	O	Data Technology Corp.	15 Higgins Ave.	Bedford, MA 01730		(617) 275-4044	
Mr. Cliff Hall	P	Datacopy Corp.	1215 Terra Bella Ave. Mtn. View, CA 94043			(415) 965-7900	
Mr. Mel Herman	A	Datacopy Corp.	1215 Terra Bella Ave. Mtn. View, CA 94043			(415) 965-7900	
Mr. Sam Weng	A	Datacopy Corp.	1215 Terra Bella Ave. Mtn. View, CA 94043			(415) 965-7900	
Mr. Ken Machado	O	Datacopy Corp.	1215 Terra Bella Ave. Mtn. View, CA 94043			(415) 965-7900	
Mr. John Farnsworth	O	Datapoint Corp.	MS S33	9725 Datapoint Dr.	San Antonio, TX 78284	(512) 699-5443	
Mr. Phil Devin	L	Dataquest	1290 Ridder Park Dr.	San Jose, CA 95131		(408) 971-9000	
Mr. Bill Feagin	S	DEC	ML01-5/B94	146 Main St.	Maynard, MA 01754-2571		
Mr. James Barnette	O	Dept. of Navy	8334 Barktree Ct.	Springfield, VA 22153			
Mr. Jeff Seideman	P	DEST Corp.	1201 Cadillac Court	Milpitas, CA 95035		(408) 946-7100	
Mr. Jeremy Higdon	A	DEST Corp.	1201 Cadillac Court	Milpitas, CA 95035		(408) 946-7100	
Mr. James T. Benfer	O	Digi-Data	8580 Dorsey Run Road	Jessup, MD 20794		(301) 498-0200	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
Mr. Ulrich Kuhn	O	Digirede Informatica Ltda	Av Angelica 2582	01228 San Paulo SP	Brazil	55-11-2591233 Ext. 247	
Mr. Gary S. Robinson	P	Digital Equipment Corp.	Mail stop ML 12-3/E51	146 Main Street	Maynard, MA 01754	(617) 493-4094	
Mr. John Morse	A	Digital Equipment Corp.	Mail Stop ML05-2/G1	146 Main Street	Maynard, MA 01754	(617) 493-5801	
Mr. Del Shoemaker	L	Digital Equipment Corp.	1331 Pennsylvania Ave NW	Suite 600, MS: WNP	Washington, DC 20004	(202) 383-5622	
Mr. Alan Arnaud	O	Digital Equipment Corp.	333 South Street	SHR1-4/D10	Shrewsbury, MA 01545	(617) 841-2301	
Mr. Edward A. Gardner	O	Digital Equipment Corp.	301 Rockrimmon Blvd., S.	CXO 1-2/H26	Col. Springs, CO 80919	(719) 548-2247	
Mr. Richard Lewis	O	Digital Equipment Corp.	P.O. Box 80	ABO/A1	Albuquerque, NM 87103		
Mr. Charles Monia	O	Digital Equipment Corp.	100 Nickeson Rd.	Marlboro, MA 01777			
Mr. Duncan McDonald	P	Distributed Logic Corp.	1555 S. Sinclair	Anaheim, CA 92806		(714) 937-5700	(714) 978-2420
Mr. Ed Carmona	A	Distributed Logic Corp.	1555 S. Sinclair St.	Anaheim, CA 92806		(714) 937-5700	
Mr. Bill Grace	O	Distributed Logic Corp.	1555 S. Sinclair St.	Anaheim, CA 92806		(714) 937-5700	
Mr. Steve Goldman	P	DPT	132 Candace Dr.	Maitland, FL 32751		(407) 830-5522	
Mr. Tom Treadway	A	DPT	132 Candace Dr.	Maitland, FL 32751		(407) 830-5522	
Mr. Dave Kuszmaul	S	DPT	132 Candace Dr.	Maitland, FL 32751		(407) 830-5522	
Mr. Jim Mulligan	O	Dupont Connector Systems	515 Fishing Creek Rd.	New Cumberland, PA 17070		(717) 938-7671	
Mr. Michael Kaplit	O	DuPont Electronics	P.O. Box 13999	Research Triangle Park, NC	27709		
Mr. Roger Derr	P	Eastman Kodak Co.	Mass Memory Division	460 Buffalo Rd.	Rochester, NY 14611	(716) 588-0596	
Mr. Stephen Fitzgerald	A	Eastman Kodak Co.	DTGRL	460 Buffalo Rd.	Rochester, NY 14611	(716) 588-0219	
Mr. D. Hekimi	L	ECMA	Rue du Rhone 114	CH-1204 Geneva	Switzerland		
Mr. Robert B. Anthony	O	EG&G WASC, Inc	P. O. Box 552	Dahlgren, VA 22448		(703) 663-2161	
Mr. Arnold J. Roccati	O	EG&G WASC, Inc	1396 Piccard Dr.	Rockville, MD 20850		(301) 840-3277	
Mr. Tom Anderson	P	ELCO Corp.	Huntingdon Industrial Park	Huntingdon, PA 16652-3117		(814) 643-0700	(814) 643-0426
Mr. Bob Strich	A	ELCO Corp.	1500 Quail St., Ste 220	Newport Beach, CA 92660		(714) 476-8462	
Mr. Tom Fitzgerald	O	Electronic Processors, Inc.	P.O. Box 569	Englewood, CO 80151		(303) 761-8540	
Mr. Vince Stinton	O	Electronic Processors, Inc.	P. O. Box 569	Englewood, CO 80117			
Mr. David C. Epps	S	Electronic Processors, Inc.	1265 W. Dartmouth Ave.	Englewood, CO 80110		(303) 761-8540	
Mr. Gerald Maurer	P	Emulex Corp.	3545 Harbor Blvd.	P.O. Box 6725	Costa Mesa, CA 92626	(714) 662-5600	(714) 241-0792 x3086

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
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Ms. Kim V. Le	A	Emulex Corp.	3545 Harbor Blvd.	P.O. Box 6725	Costa Mesa, CA 92626	(714) 662-5600	
Ms. Anita Manciet	N	Emulex Corp.					
Mr. Randy Weber	S	Emulex Corp.	3545 Harbor Blvd.	Costa Mesa, CA 92626		(714) 662-5600	
Mr. I. Dal Allan	P	ENDL	Vice Chair, X3T9.2	14426 Black Walnut Ct.	Saratoga, CA 95070	(408) 867-6630	(408) 867-2115
Mr. Ken Hallam	A	ENDL	29112 Country Hills Rd.	San Juan Capistrano, CA 92675		(714) 364-9626	
Mr. David Therrien	O	Epoch Systems	313 West Boston Post Rd.	Marlboro, MA 01752			
Mr. Ken Ng	O	Everex Systems, Inc.	9440 Telstar Ave.	El Monte, CA 91731-2906			
Mr. Michael Braitberg	O	Exabyte Corp.	1745 38th St.	Boulder, CO 80301		(303) 442-4333	(303) 442-4269
Mr. Bill Duean	O	Exabyte Corp.	1745 38th St.	Boulder, CO 80027		(303) 442-4333	
Mr. A. Buckley	O	Ferranti Computer Systems	Simonsway, Wythenshawe	Manchester M22 5LA	England	+44 61 499 3355	
Mr. Michael Rudy	O	FileNet Corp.	3530 Hyland Ave.	Costa Mesa, CA 92626		(714) 966-2344	
Mr. Carlos E. Vidales	S	FileNet Corp.	3530 Hyland Ave.	Costa Mesa, CA 92626		(714) 966-2344	
Mr. Paul Kuphal	O	Formation, Inc.	823 East Gate Drive	Mt. Laurel, NJ 08054			
Mr. Robert Liu	P	Fujitsu America, Inc.	3055 Orchard Dr.	San Jose, CA 95134		(408) 432-1300	(408) 432-1318 x3335
Jo Larsson	A	Fujitsu America, Inc.	3055 Orchard Dr.	San Jose, CA 95134		(408) 432-1300	
Mr. David Snook	A	Fujitsu America, Inc.	3055 Orchard Dr.	San Jose, CA 95134		(408) 432-1300	
Mr. Bob Thornton	O	Fujitsu Components of America	3330 Scott Blvd	Santa Clara, CA 95054		(408) 562-1735	(408) 727-0355
Mr. Joel Urban	O	Fujitsu Components of America	3330 Scott Blvd.	Santa Clara, CA 95054		(408) 562-1722	
Mr. Seiichi Sugaya	S	Fujitsu Limited	1015 Kamikodaraka	Nakahara-ku	Kawasaki, Japan 211	(044) 777-1111	
Mr. Ed Bleichner	O	Fujitsu Microelectronics	3500 Parkway Lane, Suite 210	Atlanta, GA		(404) 449-8539	
Mr. Dan Landeck	O	Fujitsu Microelectronics	3545 N. First St.	San Jose, CA 95134		(408) 562-1391	
Ms. Nusra Lodhi	O	Fujitsu Microelectronics	3320 Scott Blvd.	Santa Clara, CA 95054		(408) 562-1463	
Mr. John Reimer	O	Fujitsu Microelectronics	3545 N 1st St.	San Jose, CA 95134-1804		(408) 922-9390	
Mr. Jeff Gallup	O	Gallup and Associates	2131 University Ave.	Berkely, CA 96708			
Mr. Charles Pheterson	O	Gould C.S.D.	6901 West Sunrise Blvd.	Ft. Lauderdale, FL 33313-4499			
Mr. Bob Pentecost	P	Hewlett Packard Co.	Disc Memory Div.	11413 Chinden Blvd, MS 216	Boise, ID 83707	(208) 323-3312	
Mr. Kurt Chan	A	Hewlett Packard Co.	8000 Foothills Blvd.	Roseville, CA 95678		(916) 785-5621	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX ..
Mr. Dave McIntyre	A	Hewlett Packard Co.	Disk Memory Div.	11413 Chinden, MS-221	Boise, ID 83707	(208) 323-3003	(208) 323-2896
Mr. Pete Bramhall	O	Hewlett Packard Co.	Filton Road Stoke Gifford	Bristol BS12 6QZ	England	(0272) 799910	
Mr. Joel Dunning	O	Hewlett Packard Co.	8000 Foothills Blvd.	Roseville, CA 95678		(916) 786-8000	
Mr. Greg Hite	O	Hewlett Packard Co.	Disk Memory Div.	POB 39, MS-213	Boise, ID 83707	(208) 323-3208	
Ms. Elen Hunt	O	Hewlett Packard Co.	700 71st Ave.	Greeley, CO 80634		(303) 350-4551	
Mr. Don Loughry	O	Hewlett Packard Co.	11000 Wolf Rd.	Cupertino, CA 95014		(408) 257-7000	x2454
Mr. Fred Pramann	O	Hewlett Packard Co.	3000 Hanover St.	P.O. Box 10301	Palo Alto, CA 94303-0890	(415) 857-2048	
Mr. Pat Walker	O	Hewlett Packard Co.	Disc Memory Div.	11413 Chinden Blvd, MS 219	Boise, ID 83707	(208) 323-2418	
Mr. Rick Kato	S	Hewlett Packard Co.	700 71st Ave.	Greeley, CO 80634			
Mr. Ray Calvin	P	Hirose Electric U.S.A.	9254 Deering Av.	Chatsworth, CA 91311		(818) 709-1247	
Mr. Michael Kosmala	A	Hirose Electric U.S.A.	9254 Deering Ave.	Chatsworth, CA 91311		(818) 709-1247	
Mr. Toshiaki Kojima	O	Hitachi America, Ltd.	950 Elm Ave. Suite 300	San Bruno, CA 94066		(415) 872-1902	
Mr. Kenji Nishimura	O	Hitachi America, Ltd.	950 Elm Ave	San Bruno, CA 94066		(415) 872-1902	
Mr. Fielding S. Tabb	O	Hitachi Cable Manchester	900 Holt Ave.	Manchester, NH 03103		(603) 669-4347	(603) 669-6629
Mr. Timothy D. Jones	O	Hitachi Cable Products	1800 E. Imhoff Rd.	Norman, OK 73071		(405) 360-5500	
Mr. Sherman Black	O	Hitachi Computer Products	P.O. Box 1203	Norman, OK 73070-1203		(405) 360-5500	
Dr. Sam Karunanithi	P	HMSI, Inc.	180 Rose Orchard Way	San Jose, CA 95134		(408) 433-1990	
Mr. David McFadden	P	Honda Connector	% Mhotronics	444 Lake Cook Rd., Suite 8	Deerfield, IL 60015	(312) 945-5600	(312) 948-5604
Mr. Hiroshi Minawa	A	Honda Connector	% Mhotronics	444 Lake Cook Rd., Suite 8	Deerfield, IL 60015	(312) 945-5600	(312) 948-5604
Mr. Kris Kowal	O	Honeywell Bull, Inc.	300 Concorde Rd.	Billerica, MA 01821		(617) 671-3333	
Mr. Andy Hospodor	O	I/O XEL	1556 Halford Ave. #316	Santa Clara, CA 95051		(408) 296-5200	
Mr. George Penokie	P	IBM Corp.	Dept. 504 Bldg. 114-2	37st Highway 52 N.	Rochester, MN 55901	(507) 253-5208	
Mr. E. W. Calkins	A	IBM Corp.	P44-097	5600 Cattle Rd.	San Jose, CA 95193	(408) 284-7222	
Mr. Greg Floryance	A	IBM Corp.	Dpt. 3E2, Bldg. 114-2	37 St., Highway 52	Rochester, MN 55901	(507) 253-1869	
Mr. Gerald Marazas	A	IBM Corp.	Mail Stop 4633	P.O. Box 1328	Boca Raton, FL 33429	(305) 982-5972	
Mr. Gary R. Stephens	A	IBM Corp.	Dept 63K/071-2	9000 S. Rita Rd.	Tucson, AZ 85744	(602) 799-2246	
Mr. David A. Buesing	O	IBM Corp.	2F1/030-2	37th St. NW & Hwy 52	Rochester, MN 55901	(507) 253-9112	
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Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
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Mr. R. Hallam	A	ICL	Wenlock Way	West Gorton	Manchester,		
Mr. Gene Milligan	P	IMPRIMIS/CDC	MS OKM 151	P. O. Box 12313	Oklahoma City, OK	(405) 324-3070 (405) 324-3333 73157	
Mr. Gerald Boulder	A	IMPRIMIS/CDC	Mail Station MTE43G	12501 Whitewater Dr.	Minnetonka, MN	(612) 936-6430 55343	
Mr. Michael A. Miller	S	IMPRIMIS/CDC	M.S. MTE43G	12501 Whitewater Dr.	Minnetonka, MN	(612) 936-6442 55343	
Ms. Sharon Staples	O	Info. Resource Ctr.	Dept. 8Y21	P.O. Box 3511, Sta. C	Ottawa, Ontario K1Y 4H7		
Mr. Richard Coulson	O	Intel Corp.	HF2-1-108	5200 Elam Young Pkwy.	Hillsboro, OR	(503) 681-5287 97123	
Mr. Dean Kinard	O	Intellistor	2120 Miller Dr.	Longmont, CO	80501	(303) 678-0697	
Mr. Karl Wurstner	P	Intergraph Corp.	M/S CR1105	1 Madison Industrial Park	Huntsville, AL	(205) 772-6732 35807	
Mr. Orrin Char	A	Intergraph Corp.	1 Madison Industrial Park	Huntsville, AL	35807	(205) 772-6127	
Mr. Ivan Cowie	A	Intergraph Corp.	1 Madison Industrial Park	Huntsville, AL	35807		
Mr. Steve Kappes	P	Interphase Corp.	2925 Merrell Rd.	Dallas, TX	75229	(214) 350-9000	
Craig Scott	A	Interphase Corp.	2925 Merrell Rd.	Dallas, TX	75229	(214) 350-9000	
Bruce Brunette	O	Introl Corp.	P.O. Box 64750	St. Paul, MN	55164-0750	(612) 789-2421 x46	
Mr. Eric J. Halvorsen	P	Iomega Corp.	1821 West 4000 South	Roy, UT	84067 Bldg. # 6	(801) 778-1000	
Mr. Geoff Barton	A	Iomega Corp.	1821 West 4000 South	Roy, UT	84067	(801) 778-1000	
Mr. Marlin Klumpp	S	Irwin Magnetics	2311 Green Rd.	Ann Arbor, MI	48105	(313) 996-3323	
Mr. Dave Goodman	P	ITT Cannon	10550 Talbert	Fountain Valley, CA	92708	(714) 964-8320	
Mr. Cliff Kahn	A	ITT Cannon	10550 Talbert	Fountain Valley, CA	92708	(714) 964-8274	
Mr. Ken Tsukinari	A	JAE	1901 E. Carnegie Av., Suite A	Santa Ana, CA	92705-5504	(714) 250-8770 (714) 250-8957	
Mr. Y. Hayashida	O	JAE	1901 E. Carnegie Av., Suite A	Santa Ana, CA	92705-5504	(714) 250-8770 (714) 250-8957	
Mr. Carl Salamon	O	JAE	1901 E. Carnegie Av., Suite A	Santa Ana, CA	92705-5504	(714) 250-8770	
Mr. D. Shaff	O	JAE	1901 E. Carnegie Av., Suite A	Santa Ana, CA	92705-5504	(714) 250-8770 (714) 250-8957	
Mr. Jon Miller	O	JRM Consultants Inc	P.O. Box 90310	Santa Barbara, CA	93190-0310	(805) 564-3119	
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Mr. Erik Walberg	O	Konica Technology Corp.	777 N. Pastoria Ave.	Sunnyvale, CA	94086	(408) 773-9551 (408) 720-9288	
Mr. Alan Ebright	P	Laserdrive Ltd.	1101 Space Park Dr.	Santa Clara, CA	95054	(408) 970-3600 (408) 727-8576	
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Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

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Mr. Robert Johnston	S	LMS-TSD	2621 Van Buren Dr.	Norristown, PA 19403		(215) 666-4705	
Mr. Bruce Sketter	S	LMS-TSD	2621 Van Buren Dr.	Norristown, PA 19403		(215) 666-4660	
Mr. Mason Chen	O	Longshine Electronic Co.	6F No.245, Sec. 3	Roosevelt Rd.	Taipei, Taiwan R.O.C.		
Mr. Robert Bellino	O	Madison Cable Con.	125 Goddard Memorial Dr.	Worchester, MA 01603		(617) 752-7320	
Mr. Robert E. Smiley	O	MAI Basic Four	14101 Myford MD312	Tustin, CA 92680		(714) 730-2509	
Mr. David F. Craft, Jr.	O	Masscomp	1 Technology Park	Westford, MA 01886			
Mr. Kris Swanson	O	Masscomp	1 Technology Park	Westford, MA 01886			
Mr. Anthony Jasionowski	O	Matsushita Tech. Center	M/S 1F-1	One Panasonic Way	Secaucus, NJ 07094		
Mr. David Scheffey	P	Maxon Systems, Inc.	353 Vintage Park Dr., Suite B	Foster City, CA 94404		(415) 377-0202	
Mr. Swami Nathan	A	Maxon Systems, Inc.	353 Vintage Park Dr., Suite B	Foster City, CA 94404			
Mr. Bob Mortensen	P	Maxtor Corp.	211 River Oaks Pkwy	San Jose, CA 95134		(408) 432-4447	
Mr. Dan Banerje	A	Maxtor Corp.	211 River Oaks Pkwy	San Jose, CA 95134		(408) 432-4452	
Mr. Skip Jones	A	Maxtor Corp.	2811 Riachuelo	San Clemente, CA 92672		(408) 432-3645	
Ms. Donna Pope	O	Maxtor Corp.	211 River Oaks Pkwy	San Jose, CA 95134		(408) 432-4455	
Mr. John Hackmann	O	McDonnell Douglas	3320 Cedar Mtn Rd.	Belleville, IL 62221		(314) 895-5296	
Mr. Roger Barnes	O	Memorex Corp.	-14-47 San Tomas at Central Expsy	Santa Clara, CA 95052		(408) 987-0441	
Mr. Bob Masterson	P	Methode Electronics, Inc.	2950 S. Jamaca, #100	Aurora, CO 80014		(303) 695-1333	
Mr. Hobie Weaver	A	Methode Electronics, Inc.	3125 Poplarwood Ct.	PO Box 95073	Raleigh, NC 27625	(919) 878-0988	
Mr. Dan Paplowski	O	Methode Electronics, Inc.	7444 West Wilson Av.	Chicago, IL 60656		(312) 867-9600	
Mr. Roger Corte	O	Metier Management Systems	3 Foundation St.	Ipswich IP41BG	England		
Mr. Stephen Cornaby	P	Micropolis Corp.	21211 Nordhoff St.	Chatsworth, CA 91311		(818) 718-7855	
Mr. Barton L. Phillips	A	Micropolis Corp.	21211 Nordhoff St.	Chatsworth, CA 91311		(818) 709-3341	
Mr. Paul Wassenberg	A	Micropolis Corp.	21211 Nordhoff St.	Chatsworth, CA 91311		(818) 709-3318	
Mr. Richard Hodgson	H	Micropolis Corp.	21211 Nordhoff St.	Chatsworth, CA 91311		(818) 709-3457	
Mr. Jim Patton	N	Micropolis Corp.	21211 Nordhoff St.	Chatsworth, CA 91311		(818) 709-3306	
Mr. Eric Yu	O	Microtek Lab. Inc.	16901 South Western Ave.	Gardena, CA 90247		(213) 321-2121	
Mr. Nick Livote	O	MILTOPE Corp.	1770 Walt Whitman Rd.	Melville, NY 11747		(516) 756-7639	
Mr. Michael Bryan	P	Miniscribe Corp.	1831 Lefthand Cr., B8-1	Longmont, CO 80501		(303) 678-2186	
Mr. John Mangan	A	Miniscribe Corp.	1861 Lefthand Cir. B11	Longmont, CO 80501		(303) 678-2391	(303) 678-2308

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX-
Mr. Kim Ryal	A	Miniscribe Corp.	1831 Lefthand Cr.	Longmont, CO 80501		(303) 678-2733	
Ms. Laura Shellhamer	O	Miniscribe Corp.	1831 Lefthand Cir. 88-1	Longmont, CO 80501		(303) 678-2506	
Mr. Daniel E. Moczarny	P	Mitsubishi Electronics Amer	991 Knox St.	Torrance, CA 90502		(213) 515-3993	
Mr. James Hamada	A	Mitsubishi Electronics Amer	991 Knox St.	Torrance, CA 90502		(213) 515-3993	
Mr. Toshio Hashimoto	O	Mitsubishi Electronics Amer	991 Knox St.	Torrance, CA 90502		(213) 515-3993	
Mr. Randy Lovelady	P	Molex Inc.	2222 Wellington Ct.	Lisle, IL 60532		(312) 969-4550	
Mr. Irv Triner	A	Molex Inc.	2222 Wellington Ct.	Lisle, IL 60532		(312) 969-4550	
Mr. Bill Bamford	O	Molex Inc.	2222 Wellington Ct.	Lisle, IL 60532		(312) 969-4550	
Mr. Ivor Redmonde	O	Molex International Inc.	2222 Wellington Court	Lisle, IL 60521			
Mr. Brian Wolf	O	Motorola	6501 Wm. Cannon Drive West	Austin, TX 78735-8598			
Mr. Cousy Maher	O	Motorola Micro Systems	Mail Drop DW220	2900 S. Diablo Way	Tempe, AZ 85282	(602) 438-3286	
Mr. Paul Rosen	O	Motorola Micro Systems	2900 S. Diablo Way	Tempe, AZ 85282		(602) 438-3150	
Mr. Ed Perry	O	Mountain Computer	300 El Pueblo Rd.	Scotts Valley, CA 95066			
Mr. William E. Burr	P	Nat. Inst. of Stnd. Room A-216, Bldg. 225	Gaithersburg, MD 20899			(301) 975-2914	(301) 975-2128
Mr. Liu Zuqiu	A	Nat. Inst. of Stnd. Room A-216, Bldg. 225	Gaithersburg, MD 20899			(301) 975-2914	
Mr. James Schuessler	P	National Semiconductor	POB 58090, M/S D-3969	2900 Semiconductor Dr.	Santa Clara, CA 95052-8090	(408) 721-6802	
Mr. Jim Johnston	A	National Semiconductor	POB 58090, M/S 3969	2900 Semiconductor Dr.	Santa Clara, CA 95052-8090	(408) 721-4822	
Mr. Gilbert Green	O	NCAR	1850 Table Mesa Dr.	Boulder, CO 80303		(303) 497-1270	
Mr. Aki Komatzuzaki	O	NCL America	1221 Innsbruck	Sunnyvale, CA 94089		(408) 734-1006	
Mr. Frank Krulc	O	NCL America	1221 Innsbruck	Sunnyvale, CA 94089		(408) 734-1006	
Mr. John Lohmeyer	P	NCR Corp.	3718 N. Rock Rd.	Wichita, KS 67226		(316) 636-8703	(316) 636-8889
Mr. Marty Francis	A	NCR Corp.	3718 N. Rock Rd.	Wichita, KS 67226		(316) 636-8000	
Mr. Fred F. Meadows	A	NCR Corp.	16550 W. Bernardo Dr.	San Diego, CA 92127		(619) 485-3228	
Mr. Harry Mason	O	NCR Corp.	1635 Aeroplaza	Col. Springs, CO 80916		(303) 596-5794	x224
Mr. Jack Brown	S	NCR Corp.	1635 Aeroplaza	Colorado Springs, CO 80916		(303) 596-5794	x212
Mr. Duane Draving	S	NCR Corp.	3718 N. Rock Rd.	Wichita, KS 67226		(316) 636-8720	
Mr. Monte Evans	S	NCR Corp.	3718 N. Rock Rd.	Wichita, KS 67226		(316) 636-8706	
Mr. Terry Johnson	S	NCR Corp.	3718 N. Rock Rd.	Wichita, KS 67226		(316) 636-8000	
Mr. Michael Linkous	S	NCR Corp.	3718 N. Rock Rd.	Wichita, KS 67226		(316) 636-8000	
Mr. Ron Miller	S	NCR Corp.	3718 N. Rock Rd.	Wichita, KS 67226		(316) 636-8000	
Mr. Dave Skinner	S	NCR Corp.	1635 Aeroplaza	Col. Springs, CO 80916		(719) 596-5612	
Mr. Bruce Anderson	P	NEC I.S.	155 Swanson Rd.	Boxborough, MA 01719		(508) 653-4721	
Mr. Dennis R. Powell	A	NEC I.S.	155 Swanson Rd.	Boxborough, MA 01719		(508) 635-4713	
Mr. John Zilinski	A	NEC I.S.	110 Rio Robles	San Jose, CA 95134		(408) 433-1390	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
Ms. Joan French	O	NEC Systems Laboratory	1414 Massachusetts Ave.	Boxborough, MA 01719		(508) 262-2627	
Mr. Ken Drewlo	O	Network Systems	7600 Boone Ave. N.	Brooklyn Park, MN 55428		(612) 424-4888	
Mr. Paul K. Garretson	O	Nissei Sangyo (Hitachi)	460 E. Middlefield Rd.	Mt. View, CA 94043		(415) 969-1100	
Mr. Nobuy Yawata	O	Nissho Electronics (USA)	Inwood Park, Suite 200	17310 Red Hill Ave.	Irvine, Ca 92714	(714) 261-8811	
Mr. Prentiss Smith	O	Nissho Iwai American Corp.		700 S. Flower St.	Los Angeles, CA 90017	(213) 688-1120	
Mr. Paul Clement	O	North Atlantic Industries	35 South St. (Area E-1)	Hopkinton, MA 01748		(617) 435-9011	
Mr. Ron Sulyma	O	North Atlantic Industries	60 Plant Ave.	Hauppauge, NY 11788		(516) 582-6500	
Mr. David Filpus	P	Northern Telecom, Inc.	Memory Systems Division	100 Phoenix Dr., POB D	Ann Arbor, MI 48106	(313) 973-4848	
Mr. Frank Haas	A	Northern Telecom, Inc.	Memory Systems Division	100 Phoenix Dr., POB D	Ann Arbor, MI 48106	(313) 973-4000	
Mr. Jeffry G. Shaw	O	Oaktree Systems	P.O. Box 32250	San Jose, CA 95152		(408) 258-4059	
Mr. David Huminski	O	OKIDATA	532 Fellowship Rd.	Mt. Laurel, NJ 08054		(609) 235-2600	
Mr. Roman Orzol	S	OKIDATA	532 Fellowship Rd.	Mt. Laurel, NJ 08054		(609) 235-2600	x7467
Mr. Dennis P. Trupski	P	Olivetti	20300 Steven Creek Blvd.	Cupertino, CA 95014		(408) 996-3867 (408) 996-3053	
Mr. Roberto Salgari	A	Olivetti	20300 Steven Creek Blvd.	Cupertino, CA 95014		(408) 996-3867 (408) 996-3053	
Mr. Wayne Baldwin	O	Olivetti	20300 Stevens Creek Blvd.	Cupertino, CA 95014		(408) 996-3867 (408) 996-3053	
Mr. Jim Harper	P	Optotech, Inc.	740-770 Wooten Rd.	Colorado Springs, CO 80915		(719) 570-7500	
Mr. Paul Nitza	P	OTL Engineering	15665 Williams #57	Tustin, CA 92680		(714) 542-1233	
Mr. Thomas Steury	O	Pacific Electro Data Inc.	14 Hughes, Suite B205	Irvine, CA 91718		(714) 770-3244	
Mr. Stephen S. Francis	O	Palantir Corp.	2455 Augustine Dr.	Santa Clara, CA 95054		(408) 986-8006	
Mr. Charles Yang	P	Panasonic Industrial Co.	1600 McCandless Dr.	Milpitas, CA 95035		(408) 262-2200	
Mr. Steve Heissenbuttel	A	Panasonic Industrial Co.	One Panasonic Way	Secaucus, NJ 07094		(201) 348-7000	
Mr. Hitoshi Watanabe	O	Panasonic Industrial Co.	1600 McCandless Dr.	Milpitas, CA 95035		(408) 262-2200	
Mr. Ed Cieniawa	P	Panduit Corp.	412 Rockwell Ct.	BurrRidge, IL 60521		(312) 887-1000	
Mr. Robert Bender	O	Pentax Teknologies	880 Interlocken Pkwy	Broomfield, CO 80020		(303) 460-1600 (303) 460-1628	
Mr. Bill Bunker	O	Pentax Teknologies	880 Interlocken Pkwy	Broomfield, CO 80020		(303) 460-1600 (303) 460-1628	
Mr. Gene Johnson	O	Pentax Teknologies	880 Interlocken Pkwy	Broomfield, CO 80020		(303) 460-1607 (303) 460-1628	
Mr. Mark Koch	O	Pentax Teknologies	880 Interlocken Pkwy	Broomfield, CO 80020		(303) 460-1607 (303) 460-1628	
Mr. John J. Grana	O	Performance Technologies, Inc.	435 W. Commercial St. E.	Rochester, NY 14445		(716) 586-6727	
Mr. David Thomas	P	Peripheral Technology Inc.	685 East Cochran St.	Simi Valley, CA 93065		(805) 581-1054	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
Mr. Bert Gall	O	Philips Subsystems	Bldg 2, Suite 401	1111 Northshore Dr.	Knoxville, TN (615) 558-5110 37919		
Mr. Ken Darian	O	Phillips	100 E. 42nd St.	New York, NY 10017		(212) 850-5588	
Mr. Barry Mallett	O	Plessey Microsystems Ltd.	Water Lane, Towcester,	Northants	England	(0327) 50312	
Mr. John Blagaila	O	Prairie Tek	10133 North 75th Street	Longmont, CO 80501	NH12 7JN	x2294	
Mr. Robert Metz	O	PrairieTek Corp.	10133 N. 75th St.	Longmont, CO 80501		(303) 443-3788	
Mr. James A. Whitworth	P	Priam Corp.	20 West Montague Expwy	San Jose, CA 95134		(408) 434-9300	
Mr. Mike Buckert	A	Priam Corp.	20 West Montague Expwy	San Jose, CA 95134		(408) 434-9300	
Mr. Michael Fitzpatrick	P	Prime Computer, Inc.	500 Old Connecticut Path	Framingham, MA 01701		(508) 879-2960	
Mr. James McGrath	P	Quantum Corp.	1804 McCarthy Blvd.	Milpitas, CA 95035		(408) 432-1100	
Mr. Tony Lo	A	Quantum Corp.	1804 McCarthy Blvd.	Milpitas, CA 95035		(408) 432-1100	
Mr. Tom Mager	O	Quantum Corp.	1804 McCarthy Blvd.	Milpitas, CA 95035		(408) 432-1100	
Mr. Glen Nance	O	Quantum Corp.	1804 McCarthy Blvd.	Milpitas, CA 95035			
Mr. E. Slater	O	R&D	Information Technology Plc.	Maylands Av., Hemel Hempstead	Herts HP2 7DF		
Mr. John Fobel	O	Rancho Technology, Inc.	8632 Archibald Ave, Suite 109	Rancho Cucamonga, CA 91730		(714) 987-3966	
Dr. Tetsuro Motoyoma	P	Ricoh Corporation	1321 Ridder Park Drive	San Jose, CA 95131		(408) 432-8800	(408) 452-0243
Dave Koger	A	Ricoh Corporation	1321 Ridder Park Drive	San Jose, CA 95131		(408) 432-8800	
Mr. Ben Mattox	O	Robinson Nugent	800 E. 8th St.	New Albany, IN 47136		(812) 945-0211	(812) 945-0804
Mr. David Ruxton	O	RODIME LTD	Southfield	Glenrothes, Scotland		44(592)774704	
Mr. Robert Wachob	O	Rogers Corp	One Technology Dr.	Rogers, CT 06263		(203) 774-9605	
Mr. Dexter Anderson	P	Scientific Micro Systems	339 N. Bernardo Ave.	P. O. Box 7777	Mtn View, CA 94039	(415) 962-5457	
Mr. Ron Schlitzkus	A	Scientific Micro Systems	339 N. Bernardo Ave.	P.O. Box 7777	Mountain View, CA 94039	(415) 962-5461	
Mr. Philip O'Leary	O	Scientific Micro Systems	339 N. Bernardo Ave.	Mountain View, CA 94039		(415) 964-5700	
Dr. Haim Amir	S	Scitex Corp. Ltd.	P.O. Box 330	46103 Herzlia B	Israel	(052) 54938	
Mr. D. Michael Robinson	P	Seagate Technology	920 Disc Drive	Scotts Valley, CA 95066		(408) 438-6550	
Mr. Dhisw Dera	A	Seagate Technology	920 Disc Drive	Scotts Valley, CA 95066		x4055	
Ms. Ann Marie Hopf	A	Seagate Technology	4775 Walnut St.	Boulder, CO 80301		(303) 444-9300	
Mr. Carter O'Brien	A	Seagate Technology	920 Disc Drive	Scotts Valley, CA 95066		(408) 438-6550	
Mr. Charles M. Schroter	A	Seagate Technology	920 Disc Drive	Scotts Valley, CA 95066		(408) 438-6550	
Mr. William K. Smythe	L	Secretary, IT8 Committee	NPES Inc.	1899 Preston White Drive	Reston, VA 22091	(703) 264-7200	
Mr. K. Ota	O	Seiko Epson Corp., 2L Group	Suwaminiami Factory	1010 Fujimi-Machi, Suwa-Gun	Nagano-Ken, Japan		

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX
Mr. Norm Ream	O	Self	511 Avenida San Juan E.	San Clemente, CA 92672		(714) 492-2438	
Mr. Roger Shelton	O	SEQUENT Computer Systems	15450 SW Koll Parkway	Beaverton, OR 97006-6063		(503) 627-9818	
Mr. Dean Konell	P	Siemens Info. Systems, Inc.	1077 Business Center Circle	Newbury Park, CA 91320		(805) 375-2520	
Mr. John Sondergaard	S	Siemens Info. Systems, Inc.	1077 Business Center Circle	Newbury Park, CA 91320		(805) 375-2507	
Mr. Cornelius van der Sei	O	Siemens, Communication Group	St. Martin-Strasse 76	D8000 Munich 80	West Germany	01149-89-4133-4735	
Mr. Mike Holt	O	Silicon Systems	14351 Myford Road	Tustin, CA 92680		(714) 731-7110	
Mr. Aziz Makhani	O	Silicon Systems	14351 Myford Road	Tustin, CA 92680		(714) 731-7110 x3462	
Mr. Lawrence J. Lamers	P	Sony Corp. of America	655 River Oaks Parkway	San Jose, CA 95134		(408) 432-0190 Japan FAX: 03-458-7885 USA FAX: 408-943-0740	
Mr. Masayuki Yokoyama	A	Sony Corp. of America	655 River Oaks Parkway	San Jose, CA 95134		(408) 432-0190 Same as Lamers	
Mr. David Cragg	O	Standard Micro Systems	35 Marcus Blvd.	Hauppauge, NY 11788		(516) 273-3100	
Mr. Ron Ethe	O	Standard Micro Systems	35 Marcus Blvd.	Hauppauge, NY 11788		(516) 273-3100	
Mr. David A. Hatch	P	Stewart Connector Systems	203 Monomoscoy Rd.	Mashpee, MA 02649		(617) 477-4403	
Mr. Terry Meighen	A	Stewart Connector Systems	203 Monomoscoy Rd.	Mashpee, MA 02649		(617) 477-4403	
Mr. Dennis Appleyard	P	Storage Technology Corp.	Mail Drop 4271	2270 South 88th St.	Louisville, CO 80028-4271	(303) 673-6685	
Mr. Don McCarthy	A	Storage Technology Corp.	Mail Drop 4271	2270 South 88th St.	Louisville, CO 80028-4271	(303) 673-6417	
Mr. Steve Kohalmi	O	Stratus Computer	55 Fairbanks Blvd.	Marlboro, MA 01752		(508) 460-2853	
Mr. Fred Berkowitz	P	Sun Microsystems, Inc.	2550 Garcia Ave.	Mountain View, CA 94043		(415) 691-7414	
Mr. Paul Rikkonen	A	Sun Microsystems, Inc.	Two Federal Street	Billerica, MA 01821		(617) 667-0010	
Mr. Vit Novak	O	Sun Microsystems, Inc.	2550 Garcia Ave.	Mountain View, CA 94043		(415) 336-2455	
Mr. Curtis A. Ridgeway	O	Sun Microsystems, Inc.	2550 Garcia Ave.	Mountain View, CA 94043		(415) 336-2226	
Mr. Steve Tsai	O	Sun Microsystems, Inc.	2550 Garcia Ave.	Mail Stop A5-41	Mountain View, CA 94043	(415) 691-2274	
Mr. Owen Gehlert	O	Supertek Computers, Inc.	5150 Great America Pkwy.	Santa Clara, CA 95054			
Mr. Norman Morse	O	SyQuest Technology	47923 Warm Springs Blvd.	Freemont, CA 94539		(415) 490-7511	
Mr. Joe J. Huang	O	Sysgen, Inc.	556 Gibraltar Dr.	Milpitas, CA 95035		(408) 263-4411	
Mr. David L. Smith	S	Tallgrass Storage Devices	5455 Spine Rd.	Boulder, CO 80301		(303) 530-3688	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

Name	S	Organization	Address1	Address2	Address3	Phone	FAX~
Mr. Dave Allan	O	Tallgrass Technologies	11100 W. 82nd St.	Overland Pk., KS 66214			
Mr. Frank Hannon	O	Tandem Computer Inc. Location 100-03		10555 Ridgeview Ct.	Cupertino, CA 95014	(408) 996-6635	
Mr. Satish Shah	O	Tandem Computer Inc. Location 100-03		10555 Ridgeview Ct.	Cupertino, CA 95014	(408) 996-6516	
Mr. Jim Smith	O	Tandem Computer Inc. 10555 Ridgeview Ct., 100-03		Cupertino, CA 95014-0789			
Mr. Ken Ushijima	S	Teac	ICPD	7733 Telegraph Rd.	Montebello, CA 90640	(213) 726-0303	
Mr. Tom Gardner	P	Technology Forums, Ltd.	14469 Manuella	Los Altos, CA 94022		(415) 941-5324	
Mr. Ned N. Mayrath	O	Telex Computer Products	6422 E. 41st St.	Tulsa, OK 74135		(918) 628-2370	
Mr. Gene Abel	O	TelTec, Inc.	7890 12th Avenue South	Minneapolis, MN 55425		(612) 854-9177	
Mr. Len Chansky	O	Terminal Data Corp.	2800 N. Madgra Rd.	Simi Valley, CA 93065		(805) 529-1500 x308	
Mr. D. W. Spence	P	Texas Instruments	Data Systems Division POB 2909, MS 2091	Austin, TX 78769		(512) 250-6627 (512) 250-6539	
Mr. Steven A. Justiss	A	Texas Instruments	P.O. Box 2909, M/S 2091	Austin, TX 78769		(512) 250-7561	
Mr. Jerry Laws	O	Texas Instruments	Mail Stop 2091	P.O. Box 2909	Austin, TX 78769		
Mr. Clarence Lewis	O	Texas Instruments	8390 LBJ Freeway	P.O. Box 655303 M/S 8209	Dallas, TX 75265	(214) 997-3396	
Mr. Edward R. Schuring	O	Texas Instruments	8390 LBJ Freeway	P.O. Box 655303 M/S 8209	Dallas, TX 75265		
Mr. Skip Strang	O	Texas Instruments	P. O. Box 655474	M/S 8209	Dallas, TX 75265	(214) 997-3394	
Mr. Harvey Waltersdorf	P	Thomas & Betts	1001 Frontier Road	Bridgewater, NJ 08807		(201) 707-2666 (201) 707-2145	
Mr. Paul Phillips	A	Thomas & Betts	1001 Frontier Road	Bridgewater, NJ 08807		(201) 685-1600	
Mr. Bob Brush	N	Thomas & Betts	1001 Frontier Road	Bridgewater, NJ 08807		(201) 685-1600	
Mr. Harvey Altman	O	Thorn EMI Technology	8601 Dunwoody Pl.	Atlanta, GA 30307		(404) 587-0017	
Mr. Allan Bradley	O	Tolerant Systems	81 East Daggett Drive	San Jose, CA 95134			
Mr. Iidenori Shinoda	O	Toshiba America, Inc.	375 Park Ave., Suite 1705	New York, NY 10152			
Mr. Tom Duffy	O	Tropion Inc.	185 Rt. 34	PO Box 995	Matawan, NJ 07747	(201) 290-0080	
Mr. Al Crowell	O	U. S. Design	5100 Philadelphia Way	Lanham, MD 20706		(301) 577-2880	
Mr. Peter Dougherty	P	UNISYS	San Tomas & Central Exprwy	MS 12-35	Santa Clara, CA 95052	(408) 987-2214	
Mr. Floyd Ross	A	UNISYS	P.O. Box 1874	Southeastern, PA 19398		(215) 341-1542	
Mr. Robert L. Bergey	O	UNISYS	2300 Central Expressway	Santa Clara, CA 95052			
Mr. Andrew Carroll	O	UNISYS	Tredyffrin LSG RML252	P.O. Box 203	Paoli, PA 19301		
Mr. Ernie Derkas	O	UNISYS	2476 Swedesford Rd.	Paoli, PA 19301		(215) 648-4246 (215) 648-4680	

Oct 19, 1988 - X3T9.2 Active Membership sorted by Organization - Enclosure (3)

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Mr. William G. Klehm	O	UNISYS	Burroughs Pl.	Detroit, MI 48232		(313) 972-7932	
Mr. Rama Voddi	O	UNISYS	P. O. Box 1874	Southeastern, PA 19398		(215) 341-4430	
Mr. Louis H. Sharpe	O	Vidar Systems Corp.	520 Herndon Pkwy.	Herndon, VA 22070		(703) 471-7070	
Mr. Karl Kwiat	P	Viking Connectors	21001 Nordhoff St.	Chatsworth, CA 91311		(818) 341-4330	
Mr. Peter Kurbikoff	A	Viking Connectors	21001 Nordhoff St.	Chatsworth, CA 91311		(818) 341-4330	
Mr. Ken Bledden	O	Vodavi Technologies	8300 Raintree	Scotsdale, AZ 85260			
Ms. Darlene Dubois	O	Wang Laboratories	Corporate Accounts Payable	One Executive Dr., MS Chelmsford, MA 056-11A	01824		
Mr. John Frissell	O	Wang Laboratories	Mail Stop 1429	1 Industrial Ave. 01852	Lowell, MA	(602) 437-9035	
Mr. David Griffith	O	Wang Laboratories	Mail Stop 014-490	1 Industrial Ave. 01852	Lowell, MA	(508) 967-2265	
Mr. Edwin H. MacNeil	S	Wang Laboratories	One Industrial Ave.	Lowell, MA 01851		(508) 967-7263	
Mr. Andy Millerd	O	Wangdat	3001 Redhill Ave. 4-222	Costa Mesa, CA 92626			
Mr. Kenji Eigner	O	Wangtek	41 Moreland Rd.	Simi Valley, CA 93065		(805) 583-5255	
Mr. Fred Richardson	O	Wangtek	41 Moreland Rd.	Simi Valley, CA 93065		(805) 583-5255	
Mr. Varaje	S	Wangtek	41 Moreland Rd.	Simi Valley, CA 93065		(805) 583-5255	
Anjargolian							
Mr. Binh Vwong	S	Wangtek	41 Moreland Rd.	Simi Valley, CA 93065		(805) 583-5255	
Mr. Carl Warren	L	Warren Group	2980 W. 235th Apt 12	Torrance, CA 90505		(213) 530-6097	
Mr. Jeff Stai	P	Western Digital	2445 McCabe Way	Irvine, CA 92714		(714) 474-2033	(714) 553-8152 x7137
Mr. Anil Gupta	A	Western Digital	2445 McCabe Way	Irvine, CA 92714		(714) 474-2033 x3126	
Mr. Martin Pullam	P	Winchester Electronics	400 Park Road	Watertown, CT 06795		(203) 274-8891 x366	
Mr. M. Perugini	A	Winchester Electronics	400 Park Road	Watertown, CT 06795		(203) 274-8891	
Mr. Ray Pierce	S	Xerox Corp.	1301 Ridgeview Dr.	Lewisville, TX 75076			
Mr. George W. Zeissner	O	Zeissner Engineering	8728 Frazer River Circle	Fountain Valley, CA 92708			

Oct 19, 1988 - X3T9.2 Document Register Enclosure (4)

Document	Ent Date	Doc Date	Author	Description of Document
X3T9.2/88-1	1/17/88	1/6/88	J. Stai	UPDATE BLOCK modifications
X3T9.2/88-2	1/17/88	1/6/88	J. Stai	SEARCH command modifications
X3T9.2/88-3	1/17/88	1/4/88	J. McGrath	Questions concerning section 5 of SCSI-2 Rev 3
X3T9.2/88-4	1/17/88	1/7/88	P. Johansson	Management of the "Grown" Defect List
X3T9.2/88-5	1/17/88	1/7/88	J. Stai	CHANGE DEFINITION/INQUIRY modifications
X3T9.2/88-6 Rev 2	1/17/88	7/11/88	J. McGrath	LOG SELECT and LOG SENSE commands
X3T9.2/88-7	1/17/88	11/25/87	P. Boulay	Relative Address Bit Unnecessarily Restricted??
X3T9.2/88-8	1/17/88	5/14/86	B. Snively	SET THRESHOLD and READ/RESET USAGE COUNTER commands
X3T9.2/88-9 Rev 1	1/17/88	3/3/88	D. Anderson	Target message response clarification
X3T9.2/88-10	1/17/88	1/11/88	J. Stai	March Working Group Meeting Announcement
X3T9.2/88-11	1/18/88	1/18/88	L. Lamers	SCSI-2 Working Group meeting minutes - San Jose
X3T9.2/88-12	1/20/88	1/19/88	J. Farnsworth	Request for Clarification of FORMAT UNIT command
X3T9.2/88-13	1/20/88	1/15/88	B. Driscoll	ltr to Scanner group warning of potential changes
X3T9.2/88-14	1/27/88	1/20/88	W. Smythe	ltr, Smythe to Lohmeyer, regarding IT8 liaison with X3T9.2
X3T9.2/88-15	1/28/88	1/28/88	D. Davies	PF bit Requirement in MODE SENSE
X3T9.2/88-16	1/28/88	1/28/88	D. Davies	Autosense Protocol
X3T9.2/88-17 Rev 1	2/2/88	2/8/88	J. Lohmeyer	X3T9.2 1987 Annual Report
X3T9.2/88-18	2/3/88	2/2/88	B. Spence	Follow-up report on study of miniature shielded connectors
X3T9.2/88-19	2/15/88	2/8/88	G. Houlder	May 9-11 Working Group Meeting Announcement
X3T9.2/88-20 Rev 1	2/16/88	4/25/88	J. Lohmeyer	X3T9.2 Meeting #74 Minutes -- February 22-23, 1988
X3T9.2/88-21	2/24/88	2/18/88	D. Appleyard	WRITE Command for Sequential Access Devices
X3T9.2/88-22	2/24/88	2/18/88	D. Appleyard	RECOVER BUFFERED DATA Command for Sequential Access Devices
X3T9.2/88-23	2/24/88	2/19/88	B. Snively	Consideration of phase definitions
X3T9.2/88-24	2/24/88	2/22/88	D. McIntyre	Unimplemented Page Request Response
X3T9.2/88-25 Rev 1	2/24/88	3/9/88	B. Mortensen	Rotational Position Locking
.2/88-26	2/24/88	2/24/88	G. Houlder	UNIT ATTENTION rewording to include new attentions
X3T9.2/88-27	2/24/88	2/24/88	G. Houlder	MODE SELECT rewording on saving pages and non-changeable parameters
X3T9.2/88-28	3/2/88	3/1/88	J. McGrath	Proposed wording for new Unit Attention Conditions
X3T9.2/88-29	3/8/88	3/7/88	P. Boulay	REQUEST SENSE Clarification
X3T9.2/88-30 Rev 1	3/8/88	4/23/88	J. McGrath	Proposed Definition of Caching
X3T9.2/88-31	3/14/88	3/14/88	Lamers, Stai, Lohmeyer	Newport Beach Working Group Minutes
X3T9.2/88-32 Rev 1	3/15/88	5/12/88	J. Lohmeyer	Additional Sense Code Spreadsheet
X3T9.2/88-33	3/18/88	2/22/88	C. Brill	AMP statement concerning patents on the Amplimite .050 Series connector
X3T9.2/88-34	3/21/88	3/16/88	M. Raskin	ltr, Stewart to AMP, saying high-density connector infringes patents
X3T9.2/88-35	3/21/88		M. Pulliam	ltr regarding JAE compatibility with SCSI-2 high-density connector
X3T9.2/88-36	3/21/88	3/16/88	D. McFadden	ltr enclosing Honda connector drawings for SCSI-2 high-density connector
X3T9.2/88-37	4/12/88	4/18/88	B. Spence	Synchronous ACK Edge Proposal
X3T9.2/88-38	4/12/88	4/23/88	J. McGrath	Rev 4 Issues - Sections 7 and 8
X3T9.2/88-39	4/18/88	4/18/88	B. Heber	Proposed clarification to ESDI
X3T9.2/88-40	4/18/88		Lohmeyer/Lamers	X3T9.2 Meeting #75 Minutes -- April 25-26, 1988
X3T9.2/88-41	4/21/88	4/25/88	D. Davies	READ SILI Implementation Requirement
X3T9.2/88-42	4/21/88		D. Davies	Sequential-Access Device Initialization Procedure
X3T9.2/88-43	4/21/88		D. Davies	MODE SELECT Clarification
X3T9.2/88-44	4/24/88	4/25/88	P. Boulay	WORM Device Specific MODE SELECT Page
X3T9.2/88-45	4/26/88	4/22/88	D. Smith	Alleged Patent Infringement
X3T9.2/88-46	4/26/88	4/22/88	R. Liu	MODE SELECT/SENSE Cache Control Page
X3T9.2/88-47	4/26/88	4/22/88	R. Schlitzkus	FORMAT TRACK Command for Floppy Disk Drives
X3T9.2/88-48 Rev 1	4/26/88	6/16/88	J. Morse	SCSI-2 Pinouts for Low and High Density Cables
X3T9.2/88-49 Rev 2	4/26/88	5/13/88	J. McGrath	Proposed Read Caching Page

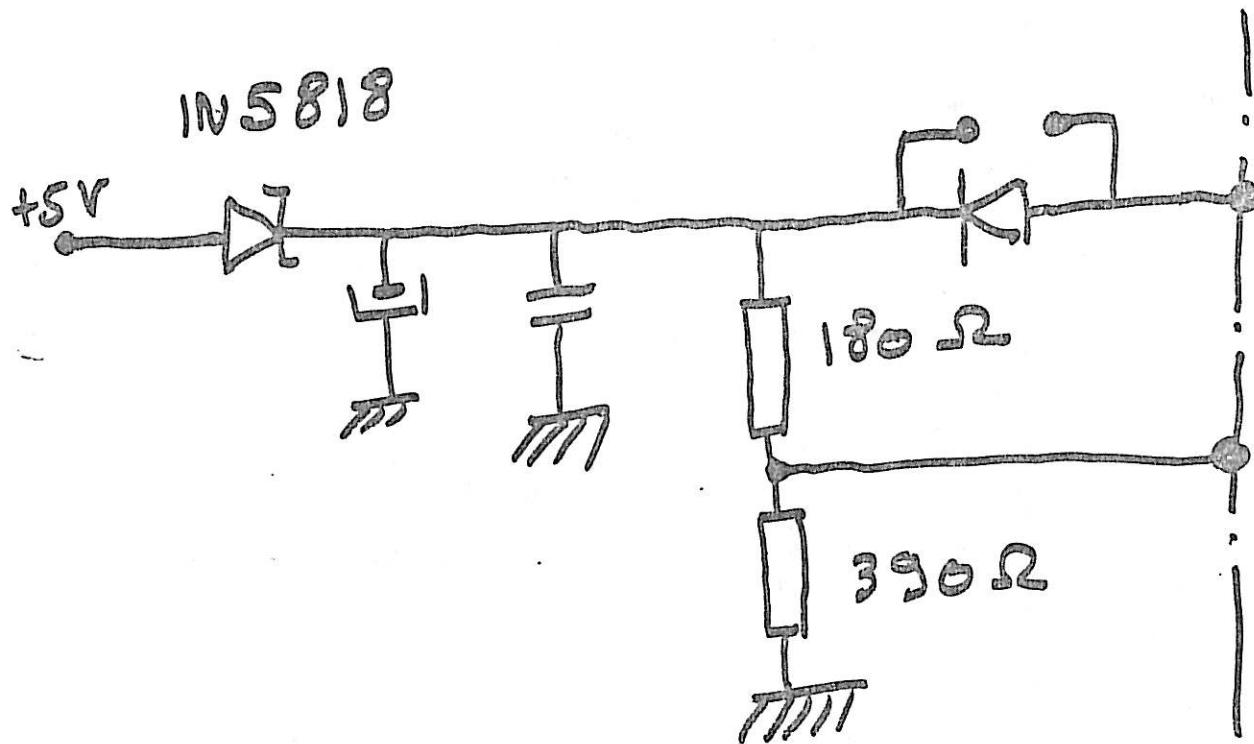
Oct 19, 1988 - X3T9.2 Document Register Enclosure (4)

Document	Ent Date	Doc Date	Author	Description of Document
X3T9.2/88-50	5/10/88	5/11/88	J. Lohmeyer	Minneapolis Working Group Meeting Minutes
X3T9.2/88-51	5/10/88	4/29/88	D. Allan	SCSI Gender-Mender
X3T9.2/88-52	5/10/88	5/4/88	C. Hess	Density Code for Helical Scan Digital Recording Devices
X3T9.2/88-53	5/10/88	5/8/88	B. Spence	READ LOG/ACCESS LOG/LOG SENSE/SELECT Pages
X3T9.2/88-54 Rev 1	5/10/88	7/6/88	J. McGrath	August 29-31 Working Group meeting Announcement (Revised)
X3T9.2/88-55	5/10/88	5/9/88	J. McGrath	Advisory vs. Mandatory Bit in the Proposed Read Caching Page
X3T9.2/88-56	5/10/88	5/9/88	D. McIntyre	July 11-13 Working Group Meeting Announcement
X3T9.2/88-57	5/11/88	5/15/88	J. McGrath	Handling Illegal Pages in MODE SELECT/SENSE Commands
X3T9.2/88-58	5/13/88	5/5/88	M. Raskin	Ltr., Raskin to AMP, Inc., requesting drawings and samples
X3T9.2/88-59 Rev 1	5/13/88	5/26/88	J. Lohmeyer	SOTR wording revisited (again and again) (and again)
X3T9.2/88-60	5/13/88	5/13/88	J. Lohmeyer	Active Termination for Differential B Cables
X3T9.2/88-61	5/16/88	5/16/88	J. Lohmeyer	Registration Authority for SCSI-2 and ESDI
X3T9.2/88-62	5/16/88	5/11/88	Allan, Ullal, Polster	Fiber Working Group Meeting Announcement
X3T9.2/88-63	5/18/88	6/16/88	J. Stai	SCSI Additional Sense Codes for Processor Devices
X3T9.2/88-64	5/18/88		J. Stai	Proposed Model for Processor Devices
X3T9.2/88-65 Rev 3	6/17/88	10/10/88	P. Boulay	Asynchronous Event Notification Revision
X3T9.2/88-66	6/17/88	6/21/88	Lohmeyer/ Lamers	X3T9.2 Meeting #76 Minutes -- June 20-21, 1988
X3T9.2/88-67	6/17/88	6/13/88	D. Hatch	Proposal to add Stewart/Viking connector to SCSI-2 as Alternative #1
X3T9.2/88-68	6/22/88	6/17/88	C. Brill	Alleged Patent Infringement
X3T9.2/88-69 Rev 2	6/22/88	8/29/88	G. Marazas	Physical Architecture -- SCSI-2 Interface
X3T9.2/88-70	6/22/88	6/17/88	Anderson/ DeYoung	Additional Sense Qualifier Codes
X3T9.2/88-71	6/30/88	6/28/88	D. Allan	Comments on the IBM 60-pin proposal
X3T9.2/88-72	7/6/88	7/13/88	Lohmeyer/ Lamers	Boise Working Group Meeting Minutes
X3T9.2/88-73	7/6/88	6/30/88	D. Allan	Revised ESDI Vendor Codes
X3T9.2/88-74	7/6/88	7/1/88	D. Allan	Correction to ESDI Spindle Motor Control Option
X3T9.2/88-75	7/6/88	6/17/88	R. Cummings	Fiber Optic Study Group Minutes
X3T9.2/88-76	7/6/88	7/6/88	F. Tabb	Preliminary test results on 28 AWG .025 center line cable
X3T9.2/88-77	7/7/88	7/7/88	J. Morse	Definition of OPEN pins in SCSI-2 Cables
X3T9.2/88-78	7/7/88	7/11/88	J. Schuessler	Update to EDSI read-delay spec. (Proposing 12 bits instead of 9 bits)
X3T9.2/88-79	7/12/88	7/7/88	B. Snively	Review of SCSI-2 Rev 4
X3T9.2/88-80 Rev 2	7/12/88	8/29/88	G. Marazas	SCSI Device Connector Layout
X3T9.2/88-81 Rev 1	7/13/88	7/24/88	B. Spence	LOG SELECT/SENSE Pages
X3T9.2/88-82	7/13/88	7/12/88	S. Goldman	Sense Key - ASC - ASCQ Hierarchy
X3T9.2/88-83	7/16/88	6/30/88	F. Berkowitz	Re: IBM 60 Pin SCSI Proposal
X3T9.2/88-84	7/16/88	7/6/88	D. McDonald	Re: Physical Architecture Proposal
X3T9.2/88-85	7/16/88		D. Barnum	60 Position Connector Proposal, SCSI-2
X3T9.2/88-86	7/16/88	6/30/88	J. Stai	Vendor ID Code for ESDI
X3T9.2/88-87	7/18/88	7/18/88	J. Morse	TERMPWR Requirements for SCSI-2
X3T9.2/88-88	7/19/88	7/18/88	J. McGrath	Changing SCSI IDs from unique configuration
X3T9.2/88-89	7/19/88		T. Wicklund	Comments on ESDI standard X3T9.2/87-105 Rev 2.A
X3T9.2/88-90	8/1/88	7/27/88	B. Driscoll	SCSI Additional Sense Codes
X3T9.2/88-91	8/8/88	8/8/88	J. Lohmeyer	Normalizing Wide Negotiation with Synchronous Negotiation
X3T9.2/88-92	8/8/88	8/12/88	P. Nitza	Auto Bus Configuration Proposal
X3T9.2/88-93	8/9/88	8/9/88	G. Penokie	SCSI-2 Proposal for Non-data Errors
X3T9.2/88-94	8/10/88	8/12/88	R. Kato	Changes to Medium Changer Command Set
X3T9.2/88-95 Rev 1	8/12/88	9/30/88	B. Pentecost	LOG SELECT and LOG SENSE commands for Large Logs

Oct 19, 1988 - X3T9.2 Document Register Enclosure (4)

Document	Ent Date	Doc Date	Author	Description of Document
X3T9.2/88-96	8/12/88	8/16/88	Lohmeyer/ Lamers	X3T9.2 Meeting #77 Minutes -- August 15-16, 1988
X3T9.2/88-97	8/17/88	8/2/88	D. Allan	Comments on Autoconfiguration
X3T9.2/88-98	8/17/88	8/5/88	D. Allan	Comment on single-ended signals from Electronic Design Magazine
X3T9.2/88-99	8/17/88	8/15/88	Lamers / Lohmeyer	Auto-configuration SSWG Minutes August 15, 1988
X3T9.2/88-100	8/17/88	8/12/88	J. McGrath	Changing SCSI IDs from non-unique ID configurations
X3T9.2/88-101	8/17/88	8/15/88	D. Barnum	Burndy proposal for a Microshield (tm) Interconnection System
X3T9.2/88-102	8/23/88	8/18/88	D. Allan	Ltr. to W. Rinehuls regarding his ESDI Comment
X3T9.2/88-103 Rev 1	9/2/88	9/2/88	D. Davies	Generic Error Recovery Mode Page
X3T9.2/88-104	9/2/88	8/29/88	A. Hospodor	Reporting Disk Rotation Speed
X3T9.2/88-105	9/2/88	8/29/88	G. Fry	Direct-Access Device Model
X3T9.2/88-106	9/2/88	5/24/88	J. Schuessler	Electrical Test Results
X3T9.2/88-107 Rev 1	9/2/88	10/3/88	B. Homans	Hierarchical Filemarks (Setmarks)
X3T9.2/88-108 Rev 1	9/2/88	10/6/88	R. Snively	B Cable Data Transfer Requirements
X3T9.2/88-109 Rev 1	9/2/88	9/8/88	L. Lamers	San Jose Working Group Minutes
X3T9.2/88-110	9/2/88	8/25/88	D. Allan	Ltr. to William Rinehuls regarding differences in ESDI document
X3T9.2/88-111	9/6/88	9/2/88	D. Hatch	Proposal to use the "DAISY-GEN" connector as the SCSI-2 internal cntr.
X3T9.2/88-112	9/6/88	8/15/88	R. Cummings	Highlights of 2nd Fiber Optic Study Group Meeting
X3T9.2/88-113	9/7/88	9/7/88	Wicklund & Weber	Proposal to clean up ESDI timing parameters
X3T9.2/88-114	9/8/88		T. Wicklund	Comments on SCSI-2, Revision 5 document
X3T9.2/88-115	9/21/88		J. McGrath	SCSI-2 Implications for SCSI-3 Reconfiguration
X3T9.2/88-116	9/26/88		J. Stai	Disable function for "IGNORE WIDE RESIDUE" message
X3T9.2/88-117	9/26/88		J. Stai	Comments on the Stewart Stamping Connector Proposal
X3T9.2/88-118	9/27/88	9/27/88	J. Lohmeyer	Interpretation of the Connector Standing Rules
X3T9.2/88-119	9/28/88	9/29/88	B. Weber	NCR Public Review comment on dpANS BSR X3.170-198X (ESDI 2.A)
X3T9.2/88-120	9/29/88	10/9/88	B. Spence	Data Pointer
X3T9.2/88-121	10/13/88	10/10/88	P. Boulay	Disconnect Control via Mode Select
X3T9.2/88-122	10/13/88	9/20/88	S. Jones	Change Definition vs. Inquiry Inconsistency
X3T9.2/88-123	10/13/88	9/30/88	D. Allan	Common Access Method Committee
X3T9.2/88-124	10/13/88	10/6/88	S. Cornaby	Progress Reporting
X3T9.2/88-125	10/13/88	10/8/88	B. Spence	Notice re the November X3T9.2 Working Group Meeting
X3T9.2/88-126	10/13/88	10/5/88	T. Wicklund	Comments on SCSI-2, Revision 5 document
X3T9.2/88-127	10/13/88	10/10/88	G. Penokie	Error Handling Action Codes
X3T9.2/88-128	10/13/88	10/10/88	D. Hatch	Stewart Connector presentation
X3T9.2/88-129	10/13/88	9/30/88	R. Cummings	Fiber Optic Study Group minutes (Aug & Sep) plus mailing list
X3T9.2/88-130	10/13/88		Lamers/ Lohmeyer	X3T9.2 Meeting #78 Minutes -- October 10-11, 1988
X3T9.2/88-131	10/13/88	10/10/88	J. Lohmeyer	Resolution of the ESDI Public Review Comments
X3T9.2/88-132	10/13/88	10/11/88	B. Pentecost	Parameter Pointer for Log Sense Command
X3T9.2/88-133	10/13/88		E. Reyner	Single-ended Signal Simulation Results
X3T9.2/88-134	10/13/88		B. Whiteman	SCSI-2 Daisy Chain Cabling Comparisons
X3T9.2/88-135	10/19/88	10/14/88	T. Wicklund	SCSI-2 Command Cross Reference
X3T9.2/88-136	10/19/88		D. Hatch	Stewart Stamping Connector Presentation October 1988

Bull single-ended termination proposal - Enclosure (5)



$$Z = 123 \Omega$$

$$I_{OL} = 44 \text{ mA}$$

$$V_{OH} = 3V$$