TEXAS INSTRUMENTS

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MEMORANDUM

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TO: John Lohmeyer, Chairman X3T9.2

FROM: Bill Spence, Texas Instruments
Ben Donaghue, Texas Instruments

SUBJECT: REPORT ON STUDY OF MINIATURE SHIELDED CONNECTOR PROPOSALS

In accordance with our previous committee discussions, TI was respresented at the Connector Working Group Meeting in Santa Clara 18-19 Nov by Ben Donaghue, an ME who has had resposibility for and experience with cable and connector selection and application for many years. He went to the meeting with no bias ept as may have resulted from his own judgment. TI has adopted no miniature nnector and has no position to protect other than its own reputation.

Major conclusions:

1. The working group did not effectively negotiate toward a unified recommendation--despite Dal's valiant efforts.

2. The technical arguments, e.g., contact force gradient and range, are less important than practical considerations which affect the serviceability in the intended applications. There is no a priori reason why any of the proposed designs could not meet the technical requirements for conductor connection. Our shock and vibration, ESD, EMI, etc. testing on previous designs do not point to inherent superiority in any one design approach. In the end, the specific connector must be evaluated.

3. It is not obvious that the question of availability of each design to production by competing vendors, to an extent sufficient to permit inclusion in an ANSI standard, has been addressed for each of the proposed designs.

4. In frequent recabling situations, as opposed to fixed installations, there seems to be no question that the tab-and-receptacle design is more vulnerable to user abuse than the ribbon-type design. Because of this, a more acceptable approach when using a tab-and-receptacle design is to have the tabs on the cable ends, rather than the bulkheads. It is more practical to substitute for a defective cable than for a defective chassis. But this configuration is not among the offerings.

5. Among the ribbon-type vendors, the apparent Burndy position with IBM gi
it a potential practical advantage. One feature of the Burndy design is
drawback in our view, however: it use of jackscrews rather than wire clips
to capture the connector. In systems larger than table-tops, where any
significant length of cable is involved, the possibility of accidental
excessive strain is very real, e.g., someone getting a foot caught in a
cable. Clips generally provide a breakaway function, screws do not. And
it is difficult to have a right-angle end-fire cable exit with jackscrews.

6. Other important considerations for any miniature connector are its range
of cable styles and abililty to effectively capture the cable, and the
availability of CSA as well as UL approval on cables sold separately from
complete systems. There was a standout design by our criteria: from a
total serviceability viewpoint, the Stewart Connectors design appears to
be excellent. But its position re multiple sourcing is as little
advanced as most of the other ribbon types.

7. Until and unless there is a concerted move by some ribbon-type vendors to
bring in a single design which meets a broad range of design values, the
choice before the Plenary at this time may be between the multi-vendor
tab-and-receptacle design (with its drawbacks) and no action on miniature
connectors at all.

8. We suggest the Plenary consider how essential it may be that the 64-pin
wide-SCSI connector be miniature. There may be a better chance of getting
a good 64-pin candidate if miniaturization is not a requirement.