MEMORANDUM

30 Nov 1987

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

Major conclusions:

1. The working group did not effectively negotiate toward a unified recommend-
dation—despite Dale’s valiant efforts.

2. The technical arguments, e.g., contact force gradient and range, are
less important than practical considerations which affect the serviceabili-
ity in the intended applications. There is no a priori reason why any of
the proposed designs could not meet the technical requirements for conduc-
tor 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 pro-
duction 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 vulner-
able 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 gives it a potential practical advantage. One feature of the Burndy design is a drawback in our view, however: its 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 ability 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.