

X3T9.2/91-196

To: G.E. Milligan
X3T9 International Representative

From: John Goldie
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EIA/TIA TR30.2.1 Chair

Regarding: Electrical Characteristic Standards
(EIA/TIA-485.1983 & ISO 8482.1987)

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The EIA/TIA-485.1983 "Standard for Electrical Characteristics of Generators and Receivers for use in Balanced Digital Multipoint Systems" defines the output voltage/current characteristics of the generator (driver) and the input voltage/current characteristics and thresholds of the receiver. It does not specify the mechanical or functional specifications of the complete interface. This standard is intended to be referenced by other EIA/TIA standards (or other standard organization standards) which define the complete interface.

ISO 8482.1987 also exists, this international standard is similar to EIA/TIA-485.1983, however, it differs in a number of specifications, parameter limits, and test conditions. ISO 8482.1987 is not the international version of EIA/TIA-485.1983. It mainly differs in the following areas: maximum data rate, maximum cable length, branch cable length, receiver thresholds, and maximum common mode range.

A need for an international version of the EIA/TIA-485.1983 Standard has been expressed by the SCSI and IPI (X3T9) committees. This request was received by the TIA TR30.2 "DTE/DCE Interface Committee", which is the originating committee of the RS-485 (EIA/TIA-485.1983) Standard. The matter was discussed at TR30.2's OCT/91 meeting, and TR30.2 and its subgroup TR30.2.1 (Ad-hoc group on Electrical Characteristics) agrees that the need for an international version of RS-485 exists. The TR30.2.1 committee has taken up the action item of listing the differences between ISO 8482.1987 and EIA/TIA-485.1983. Since ISO 8482.1987 is due for revision in 1992, the TR30.2 & TR30.2.1 committees felt it would be appropriate to submit to ISO recommended changes to ISO8482.1987 to make it an international equivalent of the more popular EIA/TIA-485.1983 standard. This list of recommended changes will be forwarded to ISO shortly.

The special requirements of SCSI-2 (X3T9.2/86, 5/1/91) and IPI (ISO 9318-6, 2/10/90) are additional restrictions required by the SCSI-2 and IPI Standards. In general they do not apply to the general purpose EIA/TIA-485.1983 interfaces. They should be additional requirements imposed by the respective standards (SCSI-2 & IPI). Also, since EIA/TIA-485.1983 is an electrical characteristics standard it does not define propagation delay, or skew parameters, however, it does define transition time (transition time is not reference to an input signal).

TR30.2.1 is also interested in developing a new high speed low power electrical characteristics standard. This project would address higher data rates, common mode range, and power dissipation concerns. At this time, a project has not been opened, however TR30.2.1 is expecting work to commence in 1992.