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Proposed Changes to SCSI-2

Purpose

The purpose of these proposed changes is to clarify some of the wording of the Working Draft Proposal concerning cabling requirements. They are being submitted for consideration due to the misinterpretation of the specification by several cable vendors. Also, a change is proposed in the single-ended bus driver spec to allow use of Schottky technology devices to be used as bus drivers. The changes are limited to section 4 and appendix D.

Cable Wiring

The connector pin assignments in appendix D tables D1 and D2 have been sometimes misinterpreted as wiring diagrams for cables. Table D2 has pin 1 assigned as SHIELD GROUND, apparently refering to how shielded ribbon cable is wired. Tables D1 and D2 differ in their assignment of pin 1. It is unlikely that different cables were intended for single-ended vs differential systems.

Proposed change to table D2, appendix D:
Pin 1 GROUND

Proposed change to note 1, table D2, appendix D:
"Implementors note: Some shielded flat ribbon cables use pin 1 as a connection to the shield."

The note 1 of table D1, appendix D has sometimes been misinterpreted to mean that cables should be wired with pin 13 open.

Proposed change to note 1, table D1, appendix D:
"Pins 1-12 and 14-25 shall be connected to ground. Pin 13 should not be connected in the SCSI node. Some products designed prior to the generation of this standard connected this pin to ground."

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Twisted Pair Pin Assignments

The use of "25-signal twisted-pair cable" is allowed, but no information is provided on how the pairs are to be wired. The intent apparently was to have a pair wired with the two phases of differential signals for the differential cables, with the same wiring for single-ended cables.

Proposed addition to section 4.2.1:
"If the 25-signal twisted-pair cable is used with Alternative 2 connectors, twisted pairs in the cable shall be wired to physically opposing contacts in the connector. For example, one pair wired to pins 1 and 26, one pair wired to pins 2 and 27, etc."

Proposed addition to section 4.2.2:
<same as above>

Single-Ended Bus Drivers

Schottky technology bus drivers offer faster and more predictable propagation delays when used in open-collector circuits. However, the signal asseration spec in section 4.4.1.1 inhibits their use due to their higher low-level output voltage.

The dual "signal assertion" and "minimum driver output" specs in this section are somewhat redundant.

Proposed change to 4.4.1.1:
"Signal assertion = 0.0 to 0.5 volts dc at 48 milliamps (sinking)"
<delete minimum driver output capability line>

David Kinsell
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