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To: T10 Parallel SCSI Working Group
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Subject: Proposal for SPI-5 for decreasing deskew error during training for Ultra640 SCSI

Introduction

As described in T10/02-163r0, inverting the polarity of some signals during transmission of the training pattern significantly decreases crosstalk for Ultra640 SCSI. This results in improved accuracy in deskewing the signals. Because of this improvement, we propose that this feature be mandatory for Ultra640 SCSI. The following identifies the changes needed in SPI-5 to implement this proposal.

10.7.4.2.2 DT DATA IN phase training pattern

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The SCSI target port shall begin section A of its training pattern only after all the signal restrictions between information transfers phases listed in 10.12 or the signal restrictions between a RESELECTION phase and a DT DATA IN phase listed in 10.6.2 are met.

For fast-160, the SCSI target port shall transmit the training pattern as described in the following. For fast-320 the SCSI target port shall transmit the training pattern as described in the following except that the polarity of DB(0, 1, 4, 5, 9, 10, 13, 14, and P_CRCA) shall be inverted during transmission of all sections (A, B, and C) so that where it is specified that these signals shall be asserted, they shall be negated, and where it is specified that these signals shall be negated, they shall be asserted. These signals shall return to their normal polarity after completion of training pattern transmission.

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10.7.4.2.3 DT DATA OUT phase training pattern

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The SCSI initiator port shall begin section A of its training pattern independent of the start of the SCSI target port's training pattern if it detects the SEL and MSG true, and C/D and I/O false on the first assertion of the REQ signal. For fast-160, the SCSI initiator port shall transmit the training pattern as described in the following. For fast-320 the SCSI initiator port shall transmit the training pattern as described in the following except that the polarity of DB(0, 1, 4, 5, 9, 10, 13, and 14) shall be inverted during transmission of all sections (A, B, and C) so that where it is specified that these signals shall be asserted, they shall be negated, and where it is specified that these signals shall be negated, they shall be asserted. These signals shall return to their normal polarity after completion of training pattern transmission.

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