

StorageTek

Date: February 17, 1989
To: SCSI Committee X3T9.2
From: Dennis Appleyard
Subject: Attention Condition Timing Delays

X3T9.2/89- 33

Further definition of the message system in SCSI-2 has created the need for deskew delays in the specification of the attention condition.

Section 5.2.1 Attention Condition of SCSI-2 Rev 7 requires that the target respond to an attention condition, by going to the MESSAGE OUT phase before switching to a new phase, if the attention condition is generated by the initiator before ACK is negated for the last byte of the current phase. Rev 7 does not specify any timing between the assertion of the ATN and the negation of ACK. Since the target is required to go to the MESSAGE OUT phase on detecting this condition, certain delays need to be specified.

The target is also required to go to BUS FREE if the initiator does not negate the ATN signal before asserting the ACK signal while transferring the last byte of the messages indicated by "Yes" in table 5-2. This requirement creates the need for certain delays to allow the target to reliably detect this situation.

To add these deskew delays, the third paragraph of section 5.2.1 should be changed to read as follows.

The initiator shall assert the ATN signal a deskew delay plus a cable deskew delay before negating the ACK signal for the last byte transferred in a bus phase for the attention condition to be honored before transition to a new bus phase. Asserting the ATN signal later might not be honored until a later bus phase and then may not result in the expected action. The initiator shall negate the ATN signal a deskew delay plus a cable deskew delay before asserting the ACK signal while transferring the last byte of the messages indicated with a "Yes" in Table 5-2. If the target detects that the initiator fails to meet this requirement, then the target shall go to the BUS FREE phase (see unexpected BUS FREE, 5.1.1).

Please consider incorporating these changes into the next revision of the SCSI-2 document.

DA:jf

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