X3T9.2/87-154

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To the Members of the X3T9.2 Committee,

As discussed at the Colorado Springs Plenary, I hereby propose a clarification to the wording on Synchronous Transfer Negotiation. This change better specifies the nature of the values offered by a device during a Synchronous Data Transfer negotiation. I believe that this stipulation would reduce the amount of text in the explanation of Synchronous Data Transfer Negotiation and that the actual required action will be better specified.

The values specified by a device during this negotiation should be the highest effective performance values (minimum transfer period and maximum REQ/ACK offset) that the device can receive successfully. It is up to the other party in the negotiation to always transfer at a period equal to or greater (equal or slower transfer rate) than the period received during the negotiation and not to exceed the REQ/ACK offset limit also received during the negotiation. No specification is made that each device specifying its maximum performance values will necessarily transfer always at those values, but only that it can receive data at that rate. Each device is free to transfer data out at rates less and at offsets less than that specified. Therefore it is perfectly acceptable for each device after a negotiation to transfer data out at different rates and offsets as long as each device does not exceed the values specified by the other party to the negotiation.

If the above is accepted, then I believe that the action to this negotiation can be made symmetric between target and initiator. The only difference that need be specified would be the different methods that each uses to accept or reject the negotiation. To that end, I propose that paragraphs 2, 3, and 4 and the following table be deleted on page 5-21 of SCSI-2 Revision 2 and the following inserted instead.

The transfer period is the minimum time allowed between leading edges of REQ pulses and of successive ACK pulses to prevent device reception buffer overflow.

The REQ/ACK offset is the maximum number of REQ pulses allowed to be outstanding before its corresponding ACK pulse is received at the target. This value is chosen to prevent device reception buffer overflow. A REQ/ACK offset value of zero shall indicate asynchronous mode; a value of FFh shall indicate unlimited offset.

If the initiator recognizes that negotiation is required, it asserts ATN and, if the target implements message transfers, sends a SYNCHRONOUS DATA TRANSFER REQUEST message stating its minimum reception transfer period and maximum reception offset. The target then responds as shown below. If the target determines that negotiation is required, it sends a SYNCHRONOUS DATA TRANSFER REQUEST message to the initiator stating its minimum reception transfer period and maximum reception offset. The initiator then responds as shown below.

Response to first request	Implied Agreement
(1) Non-zero REQ/ACK offset.	The target shall not exceed the initiator's maximum offset.
The devices's minimum reception reception transfer period.	Each device shall not transmit data at periods less than the other device's minimum.
(2) REQ/ACK offset equal to zero.	Asynchronous transfer.
(3) MESSAGE REJECT.	Asynchronous transfer.

Other required changes to accomplish this change would be the deletion of paragraph 3 and following table on page 5-22 and the deletion of paragraph 1 and following table on page 5-23.

I hope that the committee properly consider this clarification. Thank you for your attention.

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