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To: X3T10 Membership

From: John Lohmeyer, X3T10 Principal member from Symbios Logic

Subject: Proposed corrections and clarifications to SPI-2 regarding Release Glitches

There are several problems in SPI-2 (Rev 9) regarding the management of release glitches. In particular, the rule in 11.1 about negating an asserted signal for a bus settle delay prior to releasing the signal does not prevent release glitches, it causes them. Table 12 contains several errors and uses some old SCSI-2 terminology. Annex C is marked informative, but it contains some statements that need to be mandatory.

To fix these problems, I propose that Annex C be deleted and that 11.1 be replaced with the following wording:

Rev 1:

At the SPI-2 Working Group meeting on August 13th, several suggestions were made for improving this proposal. The changes are incorporated in revision 1.

11.1 Additional requirements to manage LVD release glitches

Under some conditions, an LVD signal that transitions from actively negated to released may cause brief pulses to the true signal state. These pulses are called “release glitches” and may last up to a bus settle delay. Some modifications to SCSI protocol are defined in this clause to avoid adverse affects from release glitches.

SCSI devices shall incorporate the requirements specified in Table 12 when using LVD drivers and optionally may incorporate the requirements when using other drivers. The usage of active negation increases cross talk noise margin and improves the true-to-false transition speed as compared to passive negation.

Table 12- Additional requirements for devices using LVD drivers

Signals	Mode	Active negation	Transmitting device	Receiving device
BSY, SEL, RST	I,T	P		
ACK, ATN	I	R	The initiator shall wait for Bus Free before releasing the ACK and ATN signals from the actively negated state	Starting no later than a BSD after releasing the BSY signal, the target shall ignore the ACK and ATN signals until a subsequent connection.
REQ	T	R	The target shall wait 2.5*BSD after releasing the BSY signal before releasing the REQ signal from the actively negated state	The Initiator shall ignore the REQ signal within 1.5*BSD of the transition of the BSY signal from true to false
C/D, I/O, MSG	T	R	After selection or reselection services, these signals shall not be released until the BSY signal is released	
DATA BUS (Selection and reselection services)	I,T	P	The transmitting device shall release all false data bits during these services	
DATA BUS (During information transfers)	I,T	R		
Key: I Initiator T Target P Prohibited R Required, except during SCAM protocol BSD Bus Settle Delay Bus Free Bus Free starts a BSD after the BSY and SEL signals are both false Note 1: This requirement conflicts with statements in SPI and shall take precedence over SPI for devices that comply with this standard.				