

To: T10 Technical Committee
 From: Rob Elliott, HP (elliott@hp.com)
 Date: 20 March 2007
 Subject: 07-155r0 SAS-2 Add expander reduced functionality to REASON field

Revision history

Revision 0 (20 March 2007) First revision

Related documents

sas2r09 - Serial Attached SCSI - 2 (SAS-2) revision 9
 07-008r0 SAS-2 Expander notification of temporary shutdown (George Penokie, IBM). Incorporated into sas2r09.
 07-121r1 Add IDENTIFY Reason code to DISCOVER and DISCOVER LIST (Steve Johnson, LSI Logic). Incorporated into sas2r09.

Overview

07-008r8 defines “expander reduced functionality” as a reason an expander device might take down its phys and perform new link reset sequences. This should be included in the list of reason codes transmitted in the IDENTIFY address frame REASON field and reported in the SMP DISCOVER/DISCOVER LIST response REASON fields.

Suggested changes to SAS-2

7.8.2 IDENTIFY address frame

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The REASON field indicates the reason for the link reset sequence and is defined in in table 118.

Table 118 — REASON field

Code	Description
0h	Unknown reason
1h	Power on
2h	Hard reset (e.g., phy received a HARD_RESET primitive during the hard reset sequence)(see 4.4.2), or SMP PHY CONTROL function HARD RESET phy operation (see 10.4.3.24)
3h	SMP PHY CONTROL function LINK RESET phy operation, or TRANSMIT SATA PORT SELECTION SIGNAL phy operation (see 10.4.3.24)
4h	Loss of dword synchronization (see 6.9)
5h	After the multiplexing sequence completes, MUX (LOGICAL LINK 0) received in logical link 1 or MUX (LOGICAL LINK 1) received in logical link 0 (see 6.10).
6h	I_T nexus loss timer expired in the STP target port of an STP/SATA bridge when the phy was attached to a SATA device (see 4.5)
7h	Break Timeout Timer expired (see 7.12.8)
8h	Phy test function stopped (see 10.4.3.25)
9h	Expander device reduced functionality (see 4.6.8)
9h Ah - Fh	Reserved