

To: T10 Technical Committee
From: Tim Hoglund (Tim.Hoglund@lsil.com)
Date: 21 October 2003
Subject: T10/03-363r0 SATA_TransmitALIGN state transition correction

Revision History

Revision 0 (21 October 2003) first revision

Related Documents

T10/sas1r01 - Serial Attached SCSI 1.1 revision 1

T13/ATA7r3c – AT Attachment with Packet Interface-7 Volume 3

Overview

The SATA host emulation states within the sas phy (SP) state machine provide the means for a SAS expander to establish communications with a SATA device. Necessarily, these states have been defined to emulate the sequence of steps that a SATA host follows to perform phy layer initialization.

Over the course of sas specification development, the **SP21:SATA_TransmitALIGN to SP22:SATA_PHY_Ready** state transition was modified in a manner which made it no longer an accurate emulation of the SATA host phy state machine as illustrated below (note text in **RED** for differences):

From T13/ATA7r3 (Serial ATA):

HP10: HR_SendALIGN state:

This state is entered when the appropriate speed is set.

When in this state the Physical layer shall transmit the ALIGN primitive.

Transition HP10:HP11: When **three back-to-back non-ALIGN primitives have been received** from the device, the Physical layer shall make a transition to the HP11: HR_Ready state. Non-ALIGN primitives can be detected by the presence of the k28.3 control character in the byte 0 position.

HP11: HR_Ready state:

This state is entered when non-ALIGN primitives have been received from the device.

From T10/sas1r01:

6.7.5.7 SP21:SATA_TransmitALIGN state

6.7.5.7.1 State description

This state shall repeatedly send Transmit ALIGN (0) messages to the SP transmitter.

6.7.5.7.2 Transition SP21:SATA_TransmitALIGN to SP0:OOB_COMINIT

This transition shall occur after receiving a DWS Lost message.

6.7.5.7.3 Transition SP21:SATA_TransmitALIGN to SP22:SATA_PHY_Ready

This transition shall occur after receiving three consecutive Dword Received messages containing dwords other than ALIGN(0).

Suggested Change

6.7.5.7.3 Transition SP21:SATA_TransmitALIGN to SP22:SATA_PHY_Ready

This transition shall occur after receiving three consecutive Dword Received messages containing **dwords** primitives other than ALIGN(0).