

AHCI 1.3

Errata 002 Draft



AHCI 1_3 Errata_002.doc

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1 Software Port Reset Handling Description Correction

1.1 Description of Technical Issue

In section 10.4.2 (Port Reset) the AHCI specification indicates that software should wait for PxSSTS.DET to be set to '1' after a COMRESET to determine that communication with the device has been re-established. PxSSTS.DET is set to '1' when a device is detected, but phy communication has not yet been established. Section 10.4.2 incorrectly indicates when software may assume communication has been established after a COMRESET. Only when PxSSTS.DET is set to 3h may software assume communication is properly established between the host and device.

1.2 Description of Correction to Specification

Modify section 10.4.2 Port Reset

If a port is not functioning properly after a software reset, software may attempt to re-initialize communication with the port via a COMRESET. It must first clear PxCMD.ST, and wait for PxCMD.CR to clear to '0' before re-initializing communication. However, if PxCMD.CR does not clear within a reasonable time (500 milliseconds), it may assume the interface is in a hung condition and may continue with issuing the port reset.

Software causes a port reset (COMRESET) by writing 1h to the PxSCTL.DET field to invoke a COMRESET on the interface and start a re-establishment of Phy layer communications. Software shall wait at least 1 millisecond before clearing PxSCTL.DET to 0h; this ensures that at least one COMRESET signal is sent over the interface. After clearing PxSCTL.DET to 0h, software should wait for communication to be re-established as indicated by **PxSSTS.DET being set to 3h bit 0 of PxSSTS.DET being set to '1'**. Then software should write all 1s to the PxSERR register to clear any bits that were set as part of the port reset.

When PxSCTL.DET is set to 1h, the HBA shall reset PxTFD.STS to 7Fh and shall reset PxSSTS.DET to 0h. When PxSCTL.DET is set to 0h, upon receiving a COMINIT from the attached device, PxTFD.STS.BSY shall be set to '1' by the HBA.