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Universal Flash Storage Host Controller Interface (UFSHCI)

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UNIVERSAL FLASH STORAGE HOST CONTROLLER INTERFACE (UFSHCI)

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(From JEDEC Board ballot JCB-13-50, formulated under the cognizance of the JC-64.1 Subcommittee on Electrical Specifications and Command Protocols.)

1 Scope

This standard describes a functional specification of the Host Controller Interface (HCI) for Universal Flash Storage (UFS). The objective of UFSHCI is to provide a uniform interface method of accessing the UFS hardware capabilities so that a standard/common Driver can be provided for the Host Controller. The common Driver would work with UFS host controller from any vendor. This standard includes a description of the hardware/software interface between system software and the host controller hardware. It is intended for hardware designers, system builders and software developers. This standard is a companion document to [UFS], Universal Flash Storage (UFS). The reader is assumed to be familiar with [UFS], [MIPI-UNIPRO], and [MIPI-M-PHY].

Clause 4 provides a brief overview of the architectural overview of UFS. Clause 5 describes the register interface of UFSHCI. Clause 6 describes the data structure used by UFSHCI. Clause 7 provides a theory of operation for UFSHCI. Clause 8 describes the error recovery process for UFSHCI.

2 Normative Reference

The following normative documents contain provisions that, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated. For undated references, the latest edition of the normative document referred to applies.

[MIPI-M-PHY], *MIPI Alliance Specification for M-PHY^{SM}, Version 3.0*

[MIPI-UniPro], *MIPI Alliance Specification for Unified Protocol (UniPro^{SM}), Version 1.6*

[SAM], *INCITS T10 draft standard: SCSI Architecture Model – 5 (SAM–5), Revision 05,* 19 May 2010

[SPC], *INCITS T10 draft standard: SCSI Primary Commands – 4 (SPC-4), Revision 27,* 11 October 2010

[SBC], *INCITS T10 draft standard: SCSI Block Commands – 3 (SBC–3), Revision 24,* 05 August 2010

[UFS], JEDEC JESD220B, *Universal Flash Storage (UFS), Version 2.0*

[JEP], JEDEC JEP106, *Standard Manufacturer's Identification Code*