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UNIVERSAL FLASH STORAGE HOST CONTROLLER INTERFACE (UFSHCI)**Contents**

1	Scope	1
2	Normative Reference	1
3	Acronyms, Terms and Definitions, Keywords, and Conventions.....	2
4	Architectural Overview	5
4.1	Outside of Scope	5
4.2	Interface Architecture	6
4.3	Transfer Request Interface.....	8
4.4	Limitations.....	9
5	UFS Host Controller Register Interface	9
5.1	Register Map.....	10
5.2	Host Controller Capabilities Registers.....	11
5.2.1	Offset 00h: CAP – Controller Capabilities	11
5.2.2	Offset 08h: VER – UFS Version	12
5.2.3	Offset 10h: HCPID – Host Controller Identification Descriptor – Product ID.....	12
5.2.4	Offset 14h: HCMID – Host Controller Identification Descriptor – Manufacturer ID.....	12
5.2.5	Offset 18h: AHIT – Auto-Hibernate Idle Timer	13
5.3	Operation and Runtime Registers	14
5.3.1	Offset 20h: IS – Interrupt Status	14
5.3.2	Offset 24h: IE – Interrupt Enable.....	16
5.3.3	Offset 30h: HCS – Host Controller Status.....	17
5.3.4	Offset 34h: HCE – Host Controller Enable	18
5.3.5	Offset 38h: UECPA – Host UIC Error Code PHY Adapter Layer.....	19
5.3.6	Offset 3Ch: UECDL – Host UIC Error Code Data Link Layer.....	19
5.3.7	Offset 40h: UECN – Host UIC Error Code Network Layer	20
5.3.8	Offset 44h: UECT – Host UIC Error Code Transport Layer	20
5.3.9	Offset 48h: UECDME – Host UIC Error Code	20
5.3.10	Offset 4Ch: UTRIACR – UTP Transfer Request Interrupt Aggregation Control Register	21
5.4	UTP Transfer Request Registers.....	22
5.4.1	Offset 50h: UTRLBA – UTP Transfer Request List Base Address.....	22
5.4.2	Offset 54h: UTRLBAU – UTP Transfer Request List Base Address Upper 32-bits.....	22
5.4.3	Offset 58h: UTRLDBR – UTP Transfer Request List Door Bell Register.....	23
5.4.4	Offset 5Ch: UTRLCLR – UTP Transfer Request List CLear Register	23
5.4.5	Offset 60h: UTRLRSR – UTP Transfer Request List Run Stop Register	23
5.4.6	Offset 64h: UTRLCNR – UTP Transfer Request List Completion Notification Register	24
5.5	UTP Task Management Registers	25
5.5.1	Offset 70h: UTMRLBA – UTP Task Management Request List Base Address.....	25
5.5.2	Offset 74h: UTMRLBAU – UTP Task Management Request List Base Address Upper 32-bits ..	25
5.5.3	Offset 78h: UTMRLDBR – UTP Task Management Request List Door Bell Register	25
5.5.4	Offset 7Ch: UTMRLCLR – UTP Task Management Request List CLear Register.....	26
5.5.5	Offset 80h: UTMRLRSR – UTP Task Management Request List Run Stop Register.....	26
5.6	UIC Command Registers	27
5.6.1	Offset 90h: UICCMD – UIC Command.....	27
5.6.2	Offset 94h: UICCMDARG1 – UIC Command Argument 1	28
5.6.3	Offset 98h: UICCMDARG2 – UIC Command Argument 2	29
5.6.4	Offset 9Ch: UICCMDARG3 – UIC Command Argument 3.....	30
5.6.5	Attributes for Local L2 Timers	30

Contents (cont'd)

5.7	Vendor Specific Registers.....	31
5.7.1	Offset C0h to FFh: VS – Vendor Specific	31
5.8	Crypto Registers	31
5.8.1	Offset 100h: CCAP – Crypto Capability	31
5.8.2	x-CRYPTOCAP – Crypto Capability X	32
5.8.3	x-CRYPTOCFG – Crypto Configuration X	33
6	Data structures.....	35
6.1	UTP Transfer Request List	35
6.1.1	UTP Transfer Request Descriptor.....	35
6.1.2	UTP Command Descriptor	39
6.2	UTP Task Management Request List	41
6.2.1	UTP Task Management Request Descriptor.....	41
6.3	Key Organization for Cryptographic Algorithms	43
6.3.1	AES-XTS	43
6.3.2	Bitlocker-AES-CBC	45
6.3.3	AES-ECB.....	46
6.3.4	ESSIV-AES-CBC	47
7	Theory of Operation	47
7.1	Host Controller Configuration and Control	48
7.1.1	Host Controller Initialization	48
7.1.2	Configuration and control	50
7.1.3	CRYPTOCFG Configuration Procedure	50
7.2	Data Transfer Operation	51
7.2.1	Basic Steps when Building a UTP Transfer Request.....	52
7.2.2	UPIU Processing.....	53
7.2.3	Processing UTP Transfer Request Completion	55
7.3	Task Management Function.....	57
7.3.1	Basic Steps when Building a UTP Task Management Request.....	57
7.3.2	Processing UTP Task Management Completion	57
7.4	UIC Power Mode Change.....	58
7.5	UFSHCI Internal Rules.....	59
7.5.1	Command Processing Order	60
7.5.2	RTT Processing Rules.....	61
7.5.3	Data Unit Processing Order for Cryptographic operations	61
8	error reporting and handling.....	62
8.1	Error Types	62
8.1.1	System Bus Error	62
8.1.2	UIC Error	62
8.1.3	UIC Command Error.....	62
8.1.4	UTP Error	63
8.1.5	Host controller Fatal Error	63
8.1.6	Device Error.....	63
8.1.7	Hibernate Enter/Exit Error.....	64
8.2	Error Handling	64
8.2.1	System Bus Error Handling	64
8.2.2	UIC Error Handling	65
8.2.3	UIC Command Error Handling.....	65
8.2.4	UTP Error Handling.....	66

Contents (cont'd)

8.2.5	Host Controller Error Handling	66
8.2.6	Device Error Handling	66
8.2.7	Hibernate Enter/Exit Error Handling	66
9	Encryption ENGINE DETAILS (Informative)	67
9.1	AES-XTS	67
9.1.1	Overview	67
9.1.2	Data Unit Size	67
9.1.3	Tweak68	
9.2	Bitlocker AES-CBC	68
9.2.1	Background	68
9.2.2	Overview	69
9.2.3	Sector (Data Unit) Size S	69
9.2.4	Sector Offset O	69
9.2.5	Sector Initialization Vector (IV)	70
9.2.6	Encryption / Decryption	70
9.3	AES-ECB	70
9.3.1	Overview	70
9.4	ESSIV-AES-CBC	70
9.4.1	Background	70
9.4.2	Data Unit Size	70
9.4.3	Sector Number (SN)	71
9.4.4	Initialization Vector (IV)	71
9.4.5	Encryption / Decryption	71
Figures		
Figure 1	— UFS Architecture Overview	5
Figure 2	— General architecture of UFS Host Controller Interface	6
Figure 3	— A conceptual block diagram of UFS host system	8
Figure 4	— x-CRYPTOCFG Array Entry Layout	34
Figure 5	— UTP Transfer Request Descriptor	35
Figure 6	— UTP Command Descriptor (UCD)	39
Figure 7	— Data structure for Physical Region Description Table	40
Figure 8	— UTP Task Management Request Descriptor	41
Figure 9	— AES128-XTS Key Layout	43
Figure 10	— AES192-XTS Key Layout	44
Figure 11	— AES256-XTS Key Layout	44
Figure 12	— AES128-CBC Key Layout	45
Figure 13	— AES256-CBC Key Layout	45
Figure 14	— AES128-ECB Key Layout	46
Figure 15	— AES256-ECB Key Layout	46
Figure 16	— Host controller link startup sequence	49
Figure 17	— UIC Power mode change	59
Figure 18	— Command processing order	60
Figure 19	— Byte Order For Data Unit Processing in Cryptographic operations	61
Figure 20	— AES-XTS Encryption	67
Figure 21	— Bitlocker AES-CBC Encryption	69
Figure 22	— IV Derivation from Sector Offset	70
Figure 23	— AES-ECB Encryption	70
Figure 24	— ESSIV-AES-CBC Encryption	71

UNIVERSAL FLASH STORAGE HOST CONTROLLER INTERFACE (UFSHCI)

(From JEDEC Board ballot JCB-17-42, formulated under the cognizance of the JC-64.1 Subcommittee on Electrical Specifications and Command Protocols (Item 205.06).)

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-PHYSM, Version 4.1*

[MIPI-UniPro], *MIPI Alliance Specification for Unified Protocol (UniProSM), Version 1.8*

[MIPI-DDB], *MIPI Alliance Specification for Device Descriptor Block (DDB), Version*

[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 JESDxxxx, *Universal Flash Storage (UFS 2.1)*

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