

**Proposed
Draft**

**Serial ATA
International Organization**

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**Serial ATA Revision 3.2 Technical Proposal #057
Title : Register Signature definition for Host
Managed Zoned devices**

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Document History

Version	Date	Comments
0	22 March 2014	Initial release.
1	24 March 2014	Incorporate corrections from the SATA-IO editor
2	24 March 2014	Incorporate changes requested by the 24 March 2014 SATA-IO [Digital] conference call.
3	31-Mar-2014	Changed ZAC reference to blue underline to indicate that it is new. Changed D181 to TPR057. Member review.

Introduction

The development of Host Managed Zoned devices requires that a unique Register Signature be used to indicate the presence of such a device. This must be in addition to the current non-Packet and Packet signatures.

As agreed to by the 24 March 2014 SATA-IO [Digital] conference call, all use of "PACKET command feature set" have been replaced by the glossary defined terms "ATA device" and "ATAPI device".

1 Technical Specification Changes

1.1 3.3 References under development

[editor note: Existing text is black. New text is marked as underlined in blue color. Material to be deleted ~~is red with strikethrough markings.~~]

...

Add the following reference under development. Note that the reference has a different format than in the past because INCITS has changed the way it numbers projects.

[Zoned-device ATA Commands \(ZAC\) \[INCITS BSR T13/537\]](#)

...

1.2 11.2 Power-on and COMRESET protocol

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DHR2: Send_good_status, this state is entered if the device hardware has been initialized and the power-up diagnostics successfully completed.

If in this state, the device requests that the Transport layer transmit a Register Device to Host FIS. If the device ~~does not implement the PACKET command feature set~~ is an ATA device that is not a Host Managed Zoned device, the register signature content shall be as defined in Figure 307.

Count(7:0)	01h
LBA(7:0)	01h
LBA(15:8)	00h
LBA(23:16)	00h
Device(7:0)	na
Error(7:0)	01h
Status(7:0)	00h..70h ^a
^a Setting of bits 6:4 in the Status register are device specific.	

Figure 307 – DHR2: Send_good_status, ATA device not a Host Managed Zoned device ~~PACKET command feature set not implemented~~

If the device is an ATAPI device ~~implements the PACKET command feature set~~, the register signature content shall be as defined in Figure 308.

Count(7:0)	01h
LBA(7:0)	01h
LBA(15:8)	14h
LBA(23:16)	EBh
Device(7:0)	na
Error(7:0)	01h
Status(7:0)	00h

Figure 308 – DHR2: Send_good_status, ATAPI device ~~PACKET command feature set implemented~~

If the device is an ATA device that is a Host Managed Zoned device (see ZAC), the register signature shall be as defined in Figure 308a.

Count(7:0)	01h
LBA(7:0)	01h
LBA(15:8)	CDh
LBA(23:16)	ABh
Device(7:0)	na
Error(7:0)	01h
Status(7:0)	00h..70h ^a
^a Setting of bits 6:4 in the Status register are device specific.	

Figure 308a – DHR2: Send_good_status, ATA Host Managed Zoned device implemented

Transition DHR2:1, if the Transport layer indicates that the Register Device to Host FIS has been transmitted, the device shall transition to the DIO: Device_Idle state.

DHR3: Send_bad_status, this state is entered if the device hardware has been initialized and the power-up diagnostics failed.

If in this state, the device requests that the Transport layer transmit a Register Device to Host FIS. If the device ~~does not implement the PACKET command feature set~~ is an ATA device that is not a Host Managed Zoned device the register signature content shall be as defined in Figure 309.

Count(7:0)	01h
LBA(7:0)	01h
LBA(15:8)	00h
LBA(23:16)	00h
Device(7:0)	na
Error(7:0)	00h, 02h..7Fh
Status(7:0)	00h..70h ^a
^a Setting of bits 6:4 in the Status register are device specific.	

Figure 309 – DHR3: Send_bad_status, ATA device not a Host Managed Zoned device ~~PACKET command feature set not~~ implemented

If the device is an ATAPI device ~~implements the PACKET command feature set~~, the register signature content shall be as defined in Figure 310.

Count(7:0)	01h
LBA(7:0)	01h
LBA(15:8)	14h
LBA(23:16)	EBh
Device(7:0)	na
Error(7:0)	00h, 02h..7Fh
Status(7:0)	00h

Figure 310 – DHR3: Send_bad_status, ATAPI device ~~PACKET command feature set not~~ implemented

If the device is an ATA device that is a Host Managed Zoned device (see ZAC), the register signature shall be as defined in Figure 310a.

Count(7:0)	01h
LBA(7:0)	01h
LBA(15:8)	CDh
LBA(23:16)	ABh
Device(7:0)	na
Error(7:0)	00h, 02h..7Fh
Status(7:0)	00h..70h ^a
^a Setting of bits 6:4 in the Status register are device specific.	

Figure 310a – DHR3: Send_bad_status, ATA Host Managed Zoned device implement