

**Proposed
Draft**

**Serial ATA
International Organization**

Version 4
6/29/2015

**Serial ATA Revision 3.2 Technical Proposal D198
Title : Addition of ZAC Management In/Out to NCQ
Non-Data log (12h) and NCQ Send and Receive
log (13h)**

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Author Information

Author Name	Company	Email address
Neil Wanamaker	PMC-Sierra	Neil.wanamaker@pmcs.com

Workgroup Chair Information

Workgroup (Phy, Digital, etc...)	Chairperson Name	Email address
Digital	James C. Hatfield	James.c.hatfield@seagate.com

Document History

Version	Date	Comments
0	6/9/2015	Initial release.
1	6/26/2015	Changed 13.7.5.15 to reference subcommands in upper case to match 13.6.6.10.
2	6/29/2015	Updated copyright dates, added remainder of table 389, fixed old typo in table.
3	6/29/2015	Fixed up change bars messed up in r2.
4	6/29/2015	Member reievw, changed D198 to TPR071

1 Introduction

When TPR 067 was prepared, the proposer omitted provision for reporting whether or not the device supported the new capabilities. The intent is to rectify this.

2 Technical specification changes

2.1 Technical specification changes overview

[editor note: Existing text is black, and includes TPR061, TPR062, and TPR067. New text is marked as underlined in blue color. Material to be deleted ~~is red with strikethrough markings~~.]

2.2 <13.7.5.1> NCQ ~~NON-DATA~~Non-Data log (12h)

Dword	Bits	Description
0	Subcommand 0h	
	31:5	Reserved
	4	Supports Abort Selected TTAG (see 13.7.5.6)
	3	Supports Abort Non-Streaming (see 13.7.5.5)
	2	Supports Abort Streaming (see 13.7.5.4)
	1	Supports Abort All (see 13.7.5.3)
	0	Supports Abort NCQ (see 13.7.5.2)
1	Subcommand 1h	
	31:3	Reserved
	2	Supports Read Data Not Continue (see 13.7.5.9)
	1	Supports Write Data Not Continue (see 13.7.5.8)
	0	Supports DEADLINE HANDLING (see 13.7.5.7)
2	Subcommand 2h	
	31:1	Reserved
	0	Supports HYBRID DEMOTE BY SIZE (see 13.7.5.10)
3	Subcommand 3h	
	31:1	Reserved
	0	Supports HYBRID CHANGE BY LBA RANGE (see 13.7.5.11)
4	Subcommand 4h	
	31:1	Reserved
	0	Supports HYBRID CONTROL (see 13.7.5.12)
5	Subcommand 5h	
	31:1	Reserved
	0	Supports Set Features (see 13.7.5.13)
6	Subcommand 6h	
	31:1	Reserved
	0	Supports ZERO EXT (see 13.7.5.14)
<u>7</u>	<u>Subcommand 7h</u>	
	<u>31:1</u>	<u>Reserved</u>
	<u>0</u>	<u>Supports ZAC Management Out (see 13.7.5.15)</u>
...
15	Subcommand Fh	
	31:1	Reserved
	0	Supports s Subcommand Fh
16..12 <u>87</u>	31:0	Reserved

Figure 389 – NCQ ~~NON-DATA~~Non-Data log (12h) data structure definition

13.7.5.15 Supports ZAC Management Out

If the Supports ZAC Management Out bit is set to one, then the device supports the ZAC MANAGEMENT OUT subcommand (see 13.6.6.10) of the NCQ NON-DATA command. If the Supports ZAC Management Out bit is cleared to zero, then the device does not support the ZAC MANAGEMENT OUT subcommand of the NCQ NON-DATA command.

3 <13.7.6.1> NCQ **S**Send and **R**Receive log overview

To determine the supported SEND FPDMA QUEUED and RECEIVE FPDMA QUEUED subcommands and their respective features, host software may read log 13h ([see Figure 390](#)).

This log shall be supported if the SEND FPDMA QUEUED and RECEIVE FPDMA QUEUED command is supported (i.e., IDENTIFY DEVICE data Word 77 bit 6 is set to one).

Dword	Bits	Description
0	Subcommand 0h	
	31:2	Reserved
	1	Supports HYBRID EVICT (see 13.7.6.2)
	0	Supports Data Set Management (see 13.7.6.3)
1	Data Set Management	
	31:1	Reserved
	0	Supports Trim (see 13.7.6.4)
2	Supports Read Log	
	31:3	Reserved
	2	Supports Read Log Features field encapsulation (see 13.7.6.9)
	1	Supports Sequential Read Log (see 13.7.6.7)
	0	Supports Read Log (see 13.7.6.5)
3	Supports Write Log	
	31:2	Reserved
	1	Supports Sequential Write Log (see 13.7.6.8)
	0	Supports Write Log (see 13.7.6.6)
4	Supports ZAC Management	
	31:2	Reserved
	1	Supports ZAC Management In (see 13.7.6.11)
	0	Supports ZAC Management Out (see 13.7.6.10)
4..127	Reserved	
5..127	Reserved	

Figure 390 – NCQ **S**Send and **R**Receive log (13h) data structure definition

13.7.6.10 [Supports ZAC Management Out](#)

If the Supports ZAC Management Out bit is set to one, then the device supports the ZAC MANAGEMENT OUT subcommand (see 13.6.8.9) of the SEND FPDMA QUEUED command. If the Supports ZAC Management Out bit is cleared to zero, then the device does not support the ZAC MANAGEMENT OUT subcommand of the SEND FPDMA QUEUED command.

13.7.6.11 [Supports ZAC Management In](#)

If the Supports ZAC Management In bit is set to one, then the device supports the ZAC MANAGEMENT IN subcommand (see 13.6.7.7) of the RECEIVE FPDMA QUEUED command. If the Supports ZAC Management In bit is cleared to zero, then the device does not support the ZAC MANAGEMENT IN subcommand of the RECEIVE FPDMA QUEUED command.