

Accredited Standards Committee
NCITS, Information Technology

Doc.No. : T13/E00102R1
Date : 2/28/2000
Project : 1321D
Ref. Docs. : T13/D99004R0
Reply to : Mr. Peter McLean
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To: T13 Membership
From: Peter McLean, ATA/ATAPI-5 editor
Subj: Response to ATA/ATAPI-5 letter ballot comments

The ATA/ATAPI-5 letter ballot, T13/D99004R0, project 1321D results were 19:0:0:4. In addition, three yes votes included comments.

The editor wishes to thank all of the members who took the time to review the ATA/ATAPI-5 document and offer comments.

Responses to these comments follow in alphabetical order by company name. The comments are bolded, the responses are in normal text.

The Yes vote from Pete McLean at Maxtor Corporation had the following comments:

The following comments accompany the Maxtor yes vote for the letter ballot to forward ATA/ATAPI-5 (D1321R2).

- 1. In clauses 6.4.1 and 6.4.2, the FLUSH CACHE command has been made mandatory so the command should be moved from the optional list to the mandatory list.**

Accepted.

- 2. In clause 6.11.3, the state diagram indicates that expiration of the Standby timer only causes the device to enter Standby mode. In clause 8.14.8, it states that the IDLE command allows the device to be placed into the Idle mode using the Standby timer. I think the discussion in clause 6.11 needs to be modified to reflect the IDLE command usage of the Standby timer.**

Accepted. In 8.18.8, modify the phrase to read " place the device in Idle mode and also set the Standby timer.

- 3. In clause 6.13.4, state SEC5: Unlocked/not Frozen states that the state is entered when the device receives a SECURITY ERASE UNIT command. This is in error and should be removed.**

Accepted. Remove transition.

4. In clause 6.13.4, table 9 it states that the SECURITY ERASE PREPARE command is “Executable” when in Frozen state. In clause 8.30.6, it states that command ABRT is returned if the device is in the frozen state. I believe that 8.30.6 is correct and the table needs to be modified to show “Command aborted”.

Accepted. Also add a note in the SECURITY ERASE PREPARE command description to point out that previous standards had a discrepancy.

5. In clause 9.8, in both the Device PACKET non-data and PIO data command state diagram and the Device PACKET DMA command state diagram it indicates that the C/D and I/O bits shall be set to one when the device completes a command or releases the bus. This is in direct conflict with ATA/ATAPI-4 and should be changed to state that these bits shall be cleared to zero.

Rejected. The standard is correct.

6. In clauses 10.2.3.1, 10.2.3.2, 10.2.3.3, and 10.2.3.4, The sentence “The values for the timings for each of the Ultra DMA modes are contained in table 50.” should say “The values for the timings for each of the Multiword DMA modes are contained in table 50.”

Accepted.

7. In clause 10.2.4.9, Figure 57 got lost and it needs to be found.

Rejected. The standard is correct..

The following are the comments from Quantum Corporation regarding NCITS T13 project 1321D, AT Attachment – 5 (ATA/ATAPI-5) revision 2.

Quantum # 1. **Global**

Does the phrase “CompactFlash Association” require a “TM” or anything?

Accepted.

Quantum # 2. **Global**

I think “use” and its respective forms should replace the word “utilize” and all of its forms.

Rejected.

Quantum # 3. **Global**

There are several places where the phrases “read command”, “write command”, etc., are used (e.g., page 23 (PDF page 37), 6.4.1 General feature set for devices not implementing the PACKET command feature set, the sentence following the second bulleted list). I think that either, definitions for these need to be added to clause 3, or they should be replaced by the names of all relevant commands.

Accepted. Definition will be added to glossary.

Quantum # 4. **Global**

The document should be searched for various forms of “power-on”, “power-on reset”, “hardware reset”, “software reset”, and “reset”. I think it has been agreed that “power-

on” should always be hyphenated when referring to the reset, and none of these should be capitalized except at the beginning of a sentence.

Accepted.

Quantum # 5. **Global**

Some lists follow immediately after text without a carriage return, and some follow after a carriage return. I think the second way looks better, but, one way or the other, the document should be consistent.

Accepted.

Quantum # 6. **Global**

I discovered the term “interrupt” as in “...the host shall disable interrupts...” in several places (6.9, 6.10, 7.15.4, 8.4.8, 8.25.8, 8.47.8). All occurrences of the term should be made consistent with either the interrupt pending concept or the assertion of INTRQ (e.g., “...the host shall disable INTRQ...”).

Accepted. Disable interrupts will be changed to set or clear nIEN.

Quantum # 7. **Global**

Subcommand names for the Host Protected Area feature set are sometimes “SET MAX” (with a space between the words) and sometimes “SETMAX” (with no space between the words). I have no preference here other than the document should be consistent.

Accepted. Will be made two words, SEX MAX.

Quantum # 8. **Global**

There are several places where the phrase, “...the device internal interrupt pending...” However, “interrupt pending” is defined in clause 3 as “...an internal state of a device...”. So I think these should read simply, “...the interrupt pending...”. See the second sentence in 6.3 (page 21 (PDF page 35)) and many transitions in the state diagrams beginning with Transition DI0:xx (page 245 (PDF page 259)).

Accepted.

Quantum # 9. **page 1 (PDF page 15), 1 Scope, paragraph 3:**

The first sentence of the paragraph reads, “This standard defines the connectors and cables for physical interconnection between host and storage device, as well as, the electrical...” I think that at least one (if not both) of the commas should be deleted.

Accepted. Will remove second comma.

Quantum # 10. **page 2 (PDF page 16), 2.2 References under development:**

The SCSI Primary Commands - 3 (SPC-3) [I don’t know the number] and Multimedia Commands - 3 (MMC-3) [T10/1363-D] projects have been approved and should be included here.

Accepted.

Quantum # 11. **page 2 (PDF page 16), 3.1.1 ATA (AT Attachment):**

The text needs to be justified in this subclause.

Accepted.

Quantum # 12. **page 3 (PDF page 17), 3.1.12 check condition:**
The definition reads, "...this indicates an exception condition has occurred that needs to be reported to the host." I think that "...needs to be..." should be replaced by something like "...may be..."

Accepted. Will change to "this indicates an error or exception condition has occurred."

Quantum # 13. **page 3 (PDF page 17), 3.1.14 command aborted:**
This is an incomplete sentence. I think that it should be something like, "Command aborted is when command completion occurs with ABRT set to one in the Error register and ERR set to one in the Status register.

Rejected.

Quantum # 14. **page 3 (PDF page 17), 3.1.15 command acceptance:**
"...EXECUTE DEVICE DIAGNOSTIC (see 8.9) and DEVICE RESET command (see 8.7)." should be changed to "...EXECUTE DEVICE DIAGNOSTIC (see 8.9) and DEVICE RESET (see 8.7) commands." or "...EXECUTE DEVICE DIAGNOSTIC command (see 8.9) and DEVICE RESET command (see 8.7)."

Accepted.

Quantum # 15. **page 3 (PDF page 17), 3.1.16 Command Block registers:**
This is an incomplete sentence. I think that it should be something like, "These are the interface registers used for delivering commands to the device or posting status from the device."

Rejected.

Quantum # 16. **page 3 (PDF page 17), 3.1.20 Control Block registers:**
This is an incomplete sentence. I think that it should be something like, "These are the interface registers used for device control and to post alternate status."

Rejected.

Quantum # 17. **page 3 (PDF page 17), 3.1.21 CRC:**
This is an incomplete sentence. I think that it should be something like, "A Cyclical Redundancy Check used for the Ultra DMA protocol to check the validity of each Ultra DMA burst transferred."

Rejected.

Quantum # 18. **page 3 (PDF page 17), 3.1.22 device:**
The first sentence is incomplete. I think that it should be something like, "A device is a storage peripheral."

Rejected.

Quantum # 19. **page 3 (PDF page 17), 3.1.24 DMA (direct memory access) data transfer:**
This is an incomplete sentence. I think that it should be something like, "DMA is a means of data transfer between device and host memory without host processor intervention."

Rejected.

Quantum # 20. **page 4 (PDF page 18), 3.1.26 driver:**

This is an incomplete sentence. I think that it should be something like, “A driver is the active circuit inside a device or host that sources or sinks current to assert or negate a signal on the bus.”

Rejected.

Quantum # 21. **page 4 (PDF page 18), 3.1.27 DRQ data block:**

There appears to be an extra space before the period at the end of the first sentence that should be removed.

Accepted.

Quantum # 22. **page 4 (PDF page 18), 3.1.28 interrupt pending:**

This reads, “Interrupt pending is an internal state of a device that exists when the device has need to notify the host of an event.” I think this should be changed to, “Interrupt pending is an internal state of a device that exists when the device shall notify the host of an event by asserting INTRQ when nIEN is cleared to zero (see 6.3).”

Accepted.

Quantum # 23. **page 4 (PDF page 18), 3.1.36 register delivered command:**

This is an incomplete sentence. I think that it should be something like, “This is a command that is delivered to the device by placing the command and all of the parameters for the command in the device Command Block registers.”

Rejected.

Quantum # 24. **page 4 (PDF page 18), 3.1.37 register transfers:**

The first sentence reads, “The reading and writing of all device registers except the Data register.” I think this should be changed to something like, “Register transfers are the reading or writing of any device registers except the Data register.”

Accepted. Change to “Register transfers refer to the host reading or writing any device register except the Data register.”

Quantum # 25. **page 4 (PDF page 18), 3.1.38 released:**

The first sentence is incomplete. I think that it should be something like, “A signal is not being driven in this state.”

Rejected.

Quantum # 26. **page 4 (PDF page 18), 3.1.39 sector:**

This is an incomplete sentence. I think that it should be something like, “A sector is a uniquely addressable set of 256 words (512 bytes).”

Rejected.

Quantum # 27. **page 4 (PDF page 18), 3.1.40 signature:**

This is an incomplete sentence. I think that it should be something like, “A signature is a unique set of values placed in the Command Block registers by the device to allow the host to distinguish between register delivered command devices and packet delivered command devices.”

Rejected.

Quantum # 28. **page 4 (PDF page 18), 3.1.42 SMART:**
The first sentence is incomplete. I think that it should be something like, “Self-Monitoring, Analysis, and Reporting Technology may be used for the prediction of device degradation and/or faults.”

Rejected.

Quantum # 29. **page 5 (PDF page 19), 3.1.44 unit attention condition:**
This is an incomplete sentence. I think that it should be something like, “This state is maintained by a device implementing the PACKET Command feature set while the device has asynchronous status information to report to the host.”

Rejected.

Quantum # 30. **page 6 (PDF page 20), 3.2.2.x:**
These are all subclauses of 3.2.3 Keywords and should be numbered 3.2.3.x.

Accepted.

Quantum # 31. **page 6 (PDF page 20), 3.2.2.x:**
The first sentence of each of these is incomplete. At least it's consistent.

Rejected.

Quantum # 32. **page 6 (PDF page 20), 3.2.2.9 should:**
The second sentence is incomplete. I think that it should be something like, “This is equivalent to the phrase ‘it is recommended’.”

Rejected.

Quantum # 33. **page 9 (PDF page 23), 3.2.9 Byte ordering for data transfers, paragraph 1:**
The second sentence (“These transfers are usually 16-bit but CFA devices may implement a 8-bit PIO transfers.”) should be changed to, “These transfers are usually 16-bit but CFA devices may implement 8-bit PIO transfers.”

Accepted.

Quantum # 34. **page 9 (PDF page 23), 3.2.9 Byte ordering for data transfers, paragraph 1:**
In the next-to-last sentence there should be a hyphen between “16” and “bit”.

Accepted.

Quantum # 35. **page 9 (PDF page 23), 3.2.9 Byte ordering for data transfers, paragraph 2:**
The third sentence should read, “DD0 and DD8 shall be the least significant bits of the bytes and DD7 and DD 15 shall be the most significant bits of the bytes.”

Accepted. Deleting sentence.

Quantum # 36. **page 9 (PDF page 23), 3.2.9 Byte ordering for data transfers, note below table 2:**
I think the commas should be deleted from the note.

Accepted.

Quantum # 37. **page 10 (PDF page 24), 4.1 Cable configuration:**
I think that the sentence in the first paragraph on this page should be changed to, “It is recommended that for a single device configuration the device be placed at the opposite end of the cable from the host.”

Accepted.

Quantum # 38. **page 12 (PDF page 26), 4.2.2.1 Cable configuration:**
The text of the note in the second table in this subclause should be justified.

Accepted.

Quantum # 39. **page 15 (PDF page 29), 5.2.1 CS (1:0)- (Chip select):**
The second sentence has an instance where “16 bits” should not be hyphenated.

Accepted.

Quantum # 40. **page 15 (PDF page 29), 5.2.5 DIOR-:HDMARDY-:HSTROBE (Device I/O read:Ultra DMA ready:Ultra DMA data strobe):**
Data port should be capitalized as it is the name of a register.

Accepted.

Quantum # 41. **page 15 (PDF page 29), 5.2.6 DIOW-:STOP (Device I/O write:Stop Ultra DMA burst):**
Data port should be capitalized as it is the name of a register.

Accepted.

Quantum # 42. **page 15 (PDF page 29), 5.2.8 DMARQ (DMA request), paragraph 2:**
The second sentence has an instance where “16 bits” should not be hyphenated.

Accepted.

Quantum # 43. **page 17 (PDF page 31), 5.2.11 PDIAG-:CBLID- (Passed diagnostics:Cable assembly type identifier), paragraph 1:**
There is a space missing between the second occurrence of “Device 1” and “has”.

Accepted.

Quantum # 44. **page 17 (PDF page 31), 5.2.13.1 CSEL with 40 conductor cable:**
“40-conductor” should be hyphenated. I searched the whole document, and this is the only occurrence of this.

Accepted.

Quantum # 45. **page 18 (PDF page 32), 5.2.13.2 CSEL with 80 conductor cable:**
“80-conductor” should be hyphenated. I searched the whole document, and this is the only occurrence of this.

Accepted.

Quantum # 46. **page 19 (PDF page 33), 6.1 Command delivery, note:**
The word “specification” should be replaced by “standard”.

Accepted.

Quantum # 47. **page 19 (PDF page 33), 6.2 Register delivered data transfer command sector addressing, bulleted list:**

The fourth item should be changed to, “If a device supports CHS translation, then, following a power-on or hardware reset, the CHS translation enabled by the device shall be the default translation.”

Accepted.

Quantum # 48. **page 19 (PDF page 33), 6.2 Register delivered data transfer command sector addressing, numbered list:**

The extra period at the end of item number 2 should be deleted.

Accepted.

Quantum # 49. **page 19 (PDF page 33), 6.2 Register delivered data transfer command sector addressing (several places):**

I think that when a mathematical operator (+, -, etc.) is used, there should be a space on either side of the operator. There are several formulae in this section that should be modified to add these spaces. See also 8.16.8 [INITIALIZE DEVICE PARAMETERS] Description and 8.38.1.8 [SET MAX ADDRESS] Description.

Accepted.

Quantum # 50. **page 21 (PDF page 35), 6.2.2 Addressing constraints and error reporting:**

The phrase “ID NOT FOUND” is used in two places in this subclause. This error either should be defined in clause 3 (and the parentheses and capitalization removed), or it should be changed to something like, “...the device sets IDNF to one in the Error register and sets ERR to one in the Status register...” (see also page 123 (PDF page 137) 8.16.8).

Accepted.

Quantum # 51. **page 21 (PDF page 35), 6.3 Interrupts:**

The second sentence in item 10 in the first bulleted list should either be a note or in parentheses in the first sentence.

Rejected.

Quantum # 52. **page 21 (PDF page 35), 6.3 Interrupts:**

In the sentence immediately following the first bulleted list: “deselected” should be changed to “not selected”.

Accepted. Change to “The device shall not exit the interrupt pending state as a result of the host changing the state of the DEV bit in the Device/Head register.”

Quantum # 53. **page 22 (PDF page 36), 6.4.1 General feature set for devices not implementing the PACKET command feature set:**

I think the sentence following the second bulleted list, “Read only devices shall return command aborted in response to write commands.” should be deleted. Otherwise, the definitions for “read-only device” should be added to clause 3. However, I searched the whole document, and this is the only occurrence of this. See also Quantum #3 Global.

Accepted. Will make two lists, one for read/write devices and one for read-only devices.

Quantum # 54. **page 22 (PDF page 36), 6.4.2 General feature set for devices implementing the PACKET command feature set:
PACKET should be added to the first list.**

Accepted.

Quantum # 55. **page 22 (PDF page 36), 6.4.2 General feature set for devices implementing the PACKET command feature set:
In the second paragraph “commands” should be changed to “command” and “are” should be changed to “is” (there is only one item in the list that follows).**

Accepted, but Maxtor comment one eliminated the paragraph.

Quantum # 56. **page 23 (PDF page 37), 6.5 Multiword DMA, paragraph 1:
The second sentence reads, “When a Multiword DMA transfer mode has been set via the SET FEATURES 03h subcommand, this data transfer protocol shall be used for the data transfers associated with these commands (see 8.37).” Yet 8.37.11 reads “...One PIO mode and one DMA mode shall be selected at all times...”. Therefore the second sentence in this subclause should be changed to read something like, “When a Multiword DMA transfer mode is enabled as indicated by IDENTIFY DEVICE (see 8.12) or IDENTIFY PACKET DEVICE (see 8.13) data, this data transfer protocol shall be used for the data transfers associated with these commands. DMA transfer modes may be changed using the SET FEATURES 03h subcommand (see 8.37.11)”**

Accepted.

Quantum # 57. **page 27 (PDF page 41), 6.8 PACKET command feature set:
I think DEVICE RESET should be in the list of unique commands.**

Accepted.

Quantum # 58. **page 29 (PDF page 43), 6.9 Overlapped feature set, last paragraph:
In the second sentence, “...NOP Auto Poll command...” should be changed to, “...NOP Auto Poll subcommand (see 8.20)...”**

Accepted. Will change to “NOP command” and “NOP Auto Poll subcommand”.

Quantum # 59. **page 29 (PDF page 43), 6.10 Queued feature set, first paragraph:
In the second sentence “Overlapped” should be capitalized.**

Accepted.

Quantum # 60. **page 29 (PDF page 43), 6.10 Queued feature set, fourth paragraph:
The last sentence is cumbersome and not completely clear. I think it should read something like, “A read of the Status register or a write to the Command register shall clear the interrupt pending.”**

Accepted.

Quantum # 61. **pages 32-34 (PDF page 46-48), 6.11.3 Power modes:
In most places in the text below the state diagram a space is not used between the state number and state name (e.g., “PM1:Idle”). Though I haven’t looked at each an every**

occurrence of this in all of the other state diagrams, this is the only text where I found this format. I like this format, but, one way or the other, the document should be consistent.

Accepted.

Quantum # 62. PDF page 49, 6.13.1 through 6.13.4:

There are problems with the PDF file. A subclause number, several subclause titles, and much text are missing. This all appears to be fine in the DOC file.

Accepted.

Quantum # 63. page 41 (PDF page 55), 6.15 Host Protected Area feature set, paragraph 2: This reads, "The SET MAX commands are implemented as sub-functions of one command code. Devices supporting this feature set shall set bit 10 of word 82 of the identify data to one." I think this should read, "Devices supporting this feature set shall set bit 10 of word 82 to one in the data returned from IDENTIFY DEVICE or IDENTIFY PACKET DEVICE."

Accepted.

Quantum # 64. page 41 (PDF page 55), 6.15 Host Protected Area feature set, the two paragraphs following the second bulleted list:

These should be replaced with the following, "Devices supporting these optional extensions shall set bit 8 of word 82 to one in the data returned from IDENTIFY DEVICE or IDENTIFY PACKET DEVICE. [new paragraph] SET MAX ADDRESS, SETMAX SET PASSWORD, SETMAX LOCK, SETMAX FREEZE LOCK, and SETMAX UNLOCK are implemented as subcommands having one command code."

Accepted.

Quantum # 65. page 47 (PDF page 61), 6.15 Power-Up In Standby feature set, paragraph three:

There are several minor issues beginning at sentence four. I think the text from that point on should read, "If the device implements this SET FEATURES subcommand and power-up into Standby is enabled, and the device receives an IDENTIFY DEVICE or IDENTIFY PACKET DEVICE command while in Standby as a result of powering up into Standby, the device shall respond to the command remaining in Standby (without spinning up). If the device has IDENTIFY DEVICE or IDENTIFY PACKET DEVICE data that requires access to its media to retrieve, the device shall set word 0 bit 2 to one to indicate that the response is incomplete. At a minimum, words 0 and 2 shall be correctly reported. Those fields that cannot be provided shall be filled with zeroes. Once the full IDENTIFY DEVICE or IDENTIFY PACKET DEVICE response data has been accessed, a full response shall be returned until the next power-down/power-up sequence has taken place." I also think that it might be a good idea to make two or more paragraphs out of this one long one.

Accepted. Will make a list of conditions.

Quantum # 66. page 60 (PDF page 74), 7.9.5 [Device Control register] Functional description:

There are issues with the last two sentences. I think they should read something like, "Any device shall respond to the SRST bit when in the SLEEP mode. When the nIEN bit is set or cleared, the selected device shall disable or enable assertion of the INTRQ signal

[this is the critical issue here: ONLY the selected device – not BOTH devices – shall perform this].”

Rejected.

Quantum # 67. **page 80 (PDF page 94), 8.7.6 [DEVICE RESET] Error outputs: The first sentence reads, “If supported, this command cannot end in an error condition.” This should be changed to, “If supported, this command shall not end in an error condition.”**

Accepted.

Quantum # 68. **page 82 (PDF page 96), 8.8.8 [DOWNLOAD MICROCODE] Description, paragraph 2: There are four instances in this paragraph where “Register” in “Sector Number Register” should not be capitalized.**

Accepted.

Quantum # 69. **page 82 (PDF page 96), 8.8.8 [DOWNLOAD MICROCODE] Description, paragraph 3: There is instance in this paragraph where “Register” in “Features Register” should not be capitalized (also: “Feature” should be “Features” in this).**

Accepted.

Quantum # 70. **page 84 (PDF page 98), 8.9.8 [EXECUTE DEVICE DIAGNOSTICS] Description: A carriage return needs to be added between the heading and the text here.**

Accepted.

Quantum # 71. **beginning on page 90 (PDF page 104), Table 20 – IDENTIFY DEVICE information: The spaces before and/or after the symbol “=” should be used consistently. My preference is one space before and one after the symbol.**

Accepted.

Quantum # 72. **beginning on page 109 (PDF page 123), Table 22 – IDENTIFY PACKET DEVICE information: The spaces before and/or after the symbol “=” should be used consistently. My preference is one space before and one after the symbol.**

Accepted.

Quantum # 73. **page 127 (PDF page 141), 8.18.8 [MEDIA LOCK] Description, paragraph 1: There is a “can” and a “will” in this paragraph. I think these should be “may” and “shall”, respectively. See also page 129 (PDF page 143), 8.19.8 [MEDIA UNLOCK] Description, paragraph 1.**

Accepted.

Quantum # 74. **page 168 (PDF page 182), 8.37.8 [SET FEATURES] Description, paragraph 2:**

The subject needs to agree with the verb in this sentence. So, it should be either "...settings...are..." or "...setting...is...".

Accepted.

Quantum # 75. **page 258 (PDF page 272), 9.7 DMA command protocol, paragraph 2:**
The first sentence reads, "Execution of this class of command includes the transfer of one or more blocks of data from the device to the host or from the device to the host using DMA transfer." I think this is supposed to be, "Execution of this class of command includes the transfer of one or more blocks of data from the host to the device or from the device to the host using DMA transfer." See also 9.9 READ/WRITE DMA QUEUED command protocol page 274 (PDF page 288), paragraph 2.

Accepted.

Quantum # 76. **beginning on page 343 (PDF page 357), Annex D:**
In many of the figures where there are signals at both the transmitter and receiver, it's difficult to tell which is which. Is there some possibly to make them more distinguishable? Maybe by making one a dashed line?

Accepted. Will change figures to indicate signals as in figure D.7.

Quantum # 77. **beginning on page 367 (PDF page 381), D.4 Ultra DMA timing assumptions:**
For some reason some of the bulleted items are in Times New Roman. This is true in the PDF as well as the DOC file. I've found this in this subclause only. They should be converted to Arial.

Accepted.

Quantum # 78. **page 376 (PDF page 390), Figure D.30:**
Some of the border for this figure is missing. This is true in the PDF as well as the DOC file.

Accepted.

Quantum # 79. **page 379 (PDF page 393), Figure D.31:**
Some of the border for this figure is missing. This is true in DOC file only. The PDF file looks okay.

Accepted.

Comments from Gene Milligan's individual ballot:

Notes from d1321r2.pdf

Page 2

Note 1; Label: Gene Milligan; Date: 1/12/0 5:59:22 PM

1) Please change my address to:

OKM 151

10321 West Reno

Oklahoma City, OK 73127-9705

P.O. Box 12313

Oklahoma City, OK 73157-2313

Accepted.

Page 15

Note 1; Label: Gene Milligan; Date: 1/12/0 6:12:33 PM

2) We should probably add a note in Clause 2 that the SCSI standards are referenced only for the Packet feature set. An analogous comment may be appropriate to the PC card standard. The object of these notations would be to avoid purchase of the standards for people implementing without these features.

Accepted. Add parenthetical comment as is done in 2.1.

Page 16

Note 1; Label: Gene Milligan; Date: 1/12/0 6:22:13 PM

3) <<ATA-1 device: A device that complies with ANSI X3.221-1994>> should probably be changed to "ATA-1 device: A device that complied with ANSI X3.221-1994,".

Accepted.

Page 18

Note 1; Label: Gene Milligan; Date: 1/18/0 3:30:22 PM

4) master and slave are old enough to delete.

Rejected. Some people in the industry still use the obsolete terms and it is probably worthwhile to avoid confusion by defining them.

Page 24

Note 1; Label: Gene Milligan; Date: 1/18/0 3:30:33 PM

5) In Table 3 the max units for lz are clobbered in the pdf.

Accepted.

Page 34

Note 1; Label: Gene Milligan; Date: 1/15/0 3:40:07 PM

6) The LBA equation looks wrong to me. I assume cylinder is cylinder number but what is sector? How do I get LBA=0?

Accepted. Make "cylinder" be "cylinder_number", "heads" be "head_number", and "sector" be "sector_number" and define these terms under the "where:".

Page 66

Note 1; Label: Gene Milligan; Date: 1/15/0 3:50:11 PM

7) Page 52 (pdf page 66) is inadvertently blank.

Accepted.

Page 262

Note 1; Label: Gene Milligan; Date: 1/15/0 5:37:42 PM

8) I think the note <<NOTE - Only commands in the queued command set may be written without error.>> needs additional context. Is it referring to writing data or to writing the command register? Several places.

Accepted. Change to "NOTE – Since a queue exists, only commands in the queued command set may be written to the Command register. If any other command is written to the Command register, the queue is aborted and command aborted is returned for the command (see 6.9)."

Page 298

Note 1; Label: Gene Milligan; Date: 1/15/0 5:46:07 PM

9) I think <<NOTE - Device/Head shall be 00h except when DEVICE RESET is issued to Device 1.>> should be more specific in the time relationship to DEVICE RESET (e.g., the prior command was a DEVICE RESET) and what returns it to 00h.

Accepted. Replace 00h or 10h above this note with "000x0000h and add a statement about the value of x."

Page 306

Note 1; Label: Gene Milligan; Date: 1/18/0 3:38:22 PM

10) Is it conventional to enclose a for example phrase in parenthesis? <<NOTE - Even though Device 1 is not present, the register content may appear valid for Device 1. Further means may be necessary to determine the existence of Device 1, e.g., issuing a command.>>

Accepted. Change to "NOTE - Even though Device 1 is not present, the register content may appear valid for Device 1. Further means may be necessary to determine the existence of Device 1 (e.g., issuing a command).

Note 2; Label: Gene Milligan; Date: 1/18/0 3:48:03 PM

11) Change <<NOTE - The remainder of this subclause is a host implementation note. The host

implimenter should be aware of the following when supporting Device 1 only configurations:

1) Following a hardware reset or software reset, Device 1 will not be selected. The following steps may be used to reselect Device 1:

- a) Write to the Device/Head register with DEV bit set to one;
- b) Using one or more of the Command Block registers that may be both written and read, such as the Sector Count or Sector Number, write a data pattern other than 00h or FFh to the register(s);
- c) Read the register(s) written in step (b). If the data read is the same as the data written, proceed to step (e);
- d) Repeat steps (a) to (c) until the data matches in step (c) or until 31 s has past. After 31 s the host may assume that Device 1 is not functioning properly;
- e) Read the Status register and Error registers. Check the Status and Error register contents for any error conditions that Device 1 may have posted.

2) Following the execution of an EXECUTE DEVICE DIAGNOSTIC command, Device 1 will not be selected. Also, no interrupt will be generated to signal command completion. After writing the EXECUTE DEVICE DIAGNOSTIC command to the Command register, execute steps (a) to (e) as described in (1) above;

3) At all other times, do not write zero into the DEV bit of the Device/Head register. All other commands execute normally.>>

to:

"NOTE - The remainder of this subclause is a recommendation for hosts. The host implimenter should be aware of the following when supporting Device 1 only configurations:

1) Following a hardware reset or software reset, Device 1 should not be selected. The following steps may be used to reselect Device 1:

- a) Write to the Device/Head register with DEV bit set to one;
- b) Using one or more of the Command Block registers that may be both written and read, such as the Sector Count or Sector Number, write a data pattern other than 00h or FFh to the register(s);
- c) Read the register(s) written in step (b). If the data read is the same as the data written, proceed to step (e);

- d) Repeat steps (a) to (c) until the data matches in step (c) or until 31 s has past. After 31 s the host may assume that Device 1 is not functioning properly;
- e) Read the Status register and Error registers. Check the Status and Error register contents for any error conditions that Device 1 may have posted.
- 2) Following the execution of an EXECUTE DEVICE DIAGNOSTIC command, Device 1 should not be selected. Also, no interrupt should be generated to signal command completion. After writing the EXECUTE DEVICE DIAGNOSTIC command to the Command register, execute steps (a) to (e) as described in (1) above;
- 3) At all other times, do not write zero into the DEV bit of the Device/Head register. All other commands execute normally."

Accepted. The phrase "Device 1 should not be selected" will be deleted.

Page 309

Note 1; Label: Gene Milligan; Date: 1/18/0 3:51:20 PM

12) <<NOTE - Some devices implementing the PACKET Command feature set prior to this standard power up in PIO mode 3 and enable IORDY as the default.>> Is it prior to ATA/ATAPI-5 or prior to ATA/ATAPI-4?

Accepted. Should read prior to ATA/ATAPI-4.

Page 327

Note 1; Label: Gene Milligan; Date: 1/18/0 3:57:33 PM

13) Can the symbology of the signal names in note 2 of Figure 57 be made clear in the pdf? Perhaps bold and a line break ahead of DIOR-. (Figure 58 appears clearer but would benefit from the same line break.

Accepted.

Page 337

Note 1; Label: Gene Milligan; Date: 1/18/0 4:09:26 PM

14) Table A.8 appears to be right justified and A.9 left justified. Both should be centered. As should Figure A.7, A.9, and Tables A.11 & A.12.

Rejected. These things are centered.

Page 362

Note 1; Label: Gene Milligan; Date: 1/18/0 4:12:44 PM

15) Please move the X1, X2, Y1, and Y2 designations to white space.

Accepted.

Note 2; Label: Gene Milligan; Date: 1/18/0 4:13:56 PM

16) The title of Figure D.9 is truncated.

Accepted. This is a .pdf problem.

Page 363

Note 1; Label: Gene Milligan; Date: 1/18/0 4:15:25 PM

17) The upper portion of the Figure D.10 box is missing as is Figure D.11.

? Not in my versions.

Page 375

Note 1; Label: Gene Milligan; Date: 1/18/0 5:53:50 PM

18) Figure D.24 is on page 361 and the title on page 362.

Accepted. This is a .pdf problem.

Make the X and Y white space comment global. In the notes it is X1 and in the figures X with a 1 below. Shouldn't they be the same?

Accepted. Will both be X1, etc.

Although it is creeping into the vernacular I question whether @ is appropriate nomenclature in the figure titles?

Accepted. Replace "@" with "at".

Page 377

Note 1; Label: Gene Milligan; Date: 1/18/0 5:54:16 PM

19) Make the missing upper line on the figure boxes global as this is frequently the case but not always.

It seems to depend on the printer used.

Page 389

Note 1; Label: Gene Milligan; Date: 1/18/0 5:54:30 PM

20) The list 1 through 5 in D.5.15 should be indented.

Accepted.

Page 393

Note 1; Label: Gene Milligan; Date: 1/18/0 5:55:02 PM

21) Figure D.31 is missing a space after Figure and the left line of the figure box.

Accepted.

Page 399

Note 1; Label: Gene Milligan; Date: 1/18/0 5:55:11 PM

22) Table F.2 needs to be centered and the table titles for several of the tables in this annex need to be centered.

Accepted. Tables F.4 and F.5 will be centered.