

Accredited Standards Committee
NCITS, Information Technology

Doc.No. : T13/E00102R0
Date : 2/14/2000
Project : 1321D
Ref. Docs. : T13/D99004R0
Reply to : Mr. Peter McLean
Maxtor Corporation
2190 Miller Drive
Longmont, CO 80501
(303) 678-2149
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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 15:0:0:8. In addition, two 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. 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. Add transitions to Idle due to Standby timer in state diagram and descriptive text.

- 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.

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.

Accepted.

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.

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”.

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.”

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 “Shall be 00h except when responding to a DEVICE RESET command to Device 1. When responding to a DEVICE RESET command to Device 1 the value shall be 10h.”

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

implimtor 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 implimtor 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.

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?

Rejected. This is the way that the logic analyzer presents them.

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.