

**Proposed
Draft**

**Serial ATA
International Organization**

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ECN071v3_SATA31_DEVSLP_Bit_Interlock

Title: DEVSLP Bit Interlock

Sponsors: SanDisk, Seagate

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Document History

Version	Date	Comments
00	04/24/2013	Initial release.
01	05/13/2013	Updated to reflect SATA 3.2 draft 17
02	05/13/2013	Updated to reflect SATA 3.2 draft 20
03	05/14/2013	Member review

1 Introduction

This ECN clarifies the interlocking behavior of bits associated with the Device Sleep feature. The ECN is intended as editorial only.

2 Technical Specification Changes

The following additions are based on the content of:

- a) Serial ATA Specification Rev. 3.1 Gold;
- b) TPR038 Device sleep;
- c) TPR044 Synch with ACS-3; and
- d) TPR046 Transitional energy reporting.

Proposed additions are marked in [blue](#). Proposed deletions are marked in [red](#). Black text is original text.

2.1.1.1.1 [Editor's note: 13.7.9.2.22] DEVICE SLEEP SUPPORTED bit

If the DEVICE SLEEP SUPPORTED bit is set to one, then:

- a) the device supports the Device Sleep feature;
- b) the device shall support the Identify Device data log; and
- c) the DEVSLP TIMING VARIABLES [SUPPORTED](#)~~field-VALID~~ bit ([see Editor's note 13.7.7.4.new](#)) shall be set to [one](#)~~4~~.

If the DEVICE SLEEP SUPPORTED bit is cleared to zero, then:

- a) the device does not support the Device Sleep feature.

IDENTIFY DEVICE Word 78 bit 8 is a copy of this field.

Note: If the DEVICE SLEEP SUPPORTED bit is cleared to zero, then the host ignores the DEVSLEEP_TO_REDUCEDPWRSTATE CAPABILITY SUPPORTED bit and the DEVSLP TIMING VARIABLES SUPPORTED bit.

2.1.1.1.2 [Editor's note: 13.7.9.2.23] DEVSLEEP_TO_REDUCEDPWRSTATE CAPABILITY SUPPORTED bit

If the DEVSLEEP_TO_REDUCEDPWRSTATE CAPABILITY SUPPORTED bit is set to one, then:

- a) the device supports remembering whether it was in Partial or Slumber after detection of assertion, and subsequent detection of negation, of DEVSLP-; [and](#)
- b) [the DEVICE SLEEP SUPPORTED bit shall be set to one.](#)

If the DEVSLEEP_TO_REDUCEDPWRSTATE CAPABILITY SUPPORTED bit is cleared to zero, then the device does not support remembering whether it was in Partial or Slumber after detection of assertion, and subsequent detection of negation, of DEVSLP.

IDENTIFY DEVICE Word 77 bit 7 is a copy of this field.

[Editor's note: TPR038 SATA 31 Device sleep added DEVSLP Timing Variables.](#)

[Editor's note: TPR044v17 SATA 31 Transitional Energy Reporting changed offset from hex to decimal.](#)

[Editor's note: TPR046v17 SATA 31 Transitional Energy Reporting added DEVSLP SUPPORTED.](#)

2.1.1.1 [editor's note: 13.7.7.1] Serial ATA Settings (page 08h)

Table 95 – Serial ATA (page 08h)

Offset	Type	Content												
48..55	QWord	DEVSLP TIMING VARIABLES												
		<table border="1"> <thead> <tr> <th>Bit</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>63</td> <td>DEVSLP TIMING VARIABLES SUPPORTED (see TPR046 13.7.7.4.new)</td> </tr> <tr> <td>62:16</td> <td>Reserved</td> </tr> <tr> <td>15:8</td> <td>DEVSLEEP EXIT TIMEOUT (DETO) (see TPR044 13.7.7.4.1)</td> </tr> <tr> <td>7:5</td> <td>Reserved</td> </tr> <tr> <td>4:0</td> <td>MINIMUM DEVSLP ASSERTION TIME (MDAT) (see TPR 044 13.7.7.4.2)</td> </tr> </tbody> </table>	Bit	Meaning	63	DEVSLP TIMING VARIABLES SUPPORTED (see TPR046 13.7.7.4.new)	62:16	Reserved	15:8	DEVSLEEP EXIT TIMEOUT (DETO) (see TPR044 13.7.7.4.1)	7:5	Reserved	4:0	MINIMUM DEVSLP ASSERTION TIME (MDAT) (see TPR 044 13.7.7.4.2)
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[Editor's note: TPR044 added 13.7.7.4 DEVSLP TIMING VARIABLES and TPR046 added DEVSLP SUPPORTED bit.](#)

2.1.1.2 [Editor's note: 13.7.7.4] DEVSLP TIMING VARIABLES

2.1.1.2.1 [Editor's note: 13.7.7.4.new] DEVSLP [TIMING VARIABLES](#) SUPPORTED bit

If the DEVSLP [TIMING VARIABLES](#) SUPPORTED bit is set to one, then the device supports DEVSLP TIMING VARIABLES.