

Device Statistics – Free-fall

T13 Technical Proposal – e06182r6

By

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[This document is a proposal for the T13 to describe the Device Statistics for the device to report. The device free-fall is the information for the device free-fall sensor detection history. The statistics supported are optional, and only applicable to the applicable devices.]

A.5 Device Statistics (Log Address 04h)

A.5.1 Overview

The Device Statistics log contains selected statistics about the device. This log shall be read-only, and shall only be accessed via the GPL feature set. This log is supported if there is a non-zero length for log address 04h in the General Purpose Log Directory. The format of the data is defined in table TBD. If the Device Statistics log is supported, only the Structure Version field is required. Each statistic is composed of a 1-byte flag field and a value field. If the bit 7 of the flag field is set to one then the value field of that statistic is valid. Each statistic shall be a multiple of 8 bytes long. The number of log pages may be greater than one.

A.5.2 Device Free-fall Statistics (Page 2)

A.5.2.1 Overview

Device Statistics log page 2 contains device free-fall information about the device as described in table TBD.

The summary of this usage statistics is as followed:

- a) Structure Version;
- b) Number of Free-fall Events Detected (Lifetime); and
- c) Number of Free-fall Events Detected Where the Magnitude Exceeds Maximum Rating (Lifetime).

Table TBD – Free-fall Statistics

Offset	Type	Content						
0-7	QWord	Structure Version						
		<table> <thead> <tr> <th>Bit</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>63:24</td> <td>Reserved</td> </tr> <tr> <td>23:16</td> <td>02h, Page Number</td> </tr> <tr> <td>15:0</td> <td>Device Statistics Version Number = 0001h</td> </tr> </tbody> </table>	Bit	Meaning	63:24	Reserved	23:16	02h, Page Number
Bit	Meaning							
63:24	Reserved							
23:16	02h, Page Number							
15:0	Device Statistics Version Number = 0001h							
8-15	QWord	Number of Free-fall Events Detected (Lifetime)						
		<table> <thead> <tr> <th>Bit</th> <th>Meaning</th> </tr> </thead> <tbody> <tr> <td>63:56</td> <td>Device Statistics Flags, (See Table TBD)</td> </tr> <tr> <td>55:32</td> <td>Reserved</td> </tr> <tr> <td>31:0</td> <td>Number of Free-fall Events Detected (Lifetime)</td> </tr> </tbody> </table>	Bit	Meaning	63:56	Device Statistics Flags, (See Table TBD)	55:32	Reserved
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55:32	Reserved							
31:0	Number of Free-fall Events Detected (Lifetime)							
16-23	QWord	Number of Free-fall Events Detected Where the Magnitude Exceeds Maximum Rating (Lifetime)						
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63:56	Device Statistics Flags, (See Table TBD)							
55:32	Reserved							
31:0	Number of Free-fall Events Detected Where the Magnitude Exceeds Maximum Rating (Lifetime)							
24-511	Byte	Reserved						

A.5.2.2 Structure Version

A.5.2.2.1 Description

Structure Version defines the version of the data structure arrangement for this statistics. The structure is defined by the T13 committee. When a new structure is defined the version number will be assigned.

Bit 23:16 is used for the page number of the Log Page for this statistics. Bit 15:0 is used for the revision number of the statistics structure.

A.5.2.2.2 Update Interval

Update interval is not applicable to the Structure Version field.

A.5.2.2.3 Measurement Units

None

A.5.2.2.4 Initialization

Structure Version shall be initialized to the corresponding number at the time of manufacture.

A.5.2.3 Number of Free-fall Events Detected (Lifetime)

A.5.2.3.1 Description

Number of Free-fall Events Detected (Lifetime) is a counter that records the number of free-fall events detected by the device. Number of Free-fall Events Detected (Lifetime) is incremented by one for each free-fall event detected.

A.5.2.3.2 Update Interval

The Number of Free-fall Events Detected (Lifetime) counter is updated and stored in a non-volatile location at a maximum interval of one hour.

A.5.2.3.3 Measurement Units

Events

A.5.2.3.4 Initialization

Number of Free-fall Events Detected (Lifetime) shall be cleared to zero at the time of manufacture.

A.5.2.4 Number of Free-fall Events Detected Where the Magnitude Exceeds Maximum Rating (Lifetime)

A.5.2.4.1 Description

Number of Free-fall Events Detected Where the Magnitude Exceeds Maximum Rating (Lifetime) is a counter that records the number of free-fall events detected by the device with the magnitude higher than the maximum rating of the device. Number of Free-fall Events Detected Where the Magnitude Exceeds Maximum Rating (Lifetime) is incremented by one for each free-fall event detected with the magnitude greater than the maximum rating of the device.

A.5.2.4.2 Update Interval

The Number of Free-fall Events Detected Where the Magnitude Exceeds Maximum Rating (Lifetime) counter is updated and stored in a non-volatile location at a maximum interval of one hour.

A.5.2.4.3 Measurement Units

Events

A.5.2.4.4 Initialization

Number of Free-fall Events Detected Where the Magnitude Exceeds Maximum Rating (Lifetime) shall be cleared to zero at the time of manufacture.