

# ACS-2 Restructure Power Conditions Log

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Revision 1

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**Document Status**

<b>Revision History</b>		
<b>Rev</b>	<b>Date</b>	<b>Description</b>
0	Nov. 1, 2009	1) Initial Revision
	Jan. 5, 2010	1) Changes approved at December 2009 plenary: A) Split the power conditions log to 2 pages: page 0 with Idles, page 1 with standbys B) change the size (from 32 bytes to 64 bytes) of each power condition descriptor to allow for future expansion

## 1 Introduction

As approved, e08120r12 described the Power Conditions log with word offsets. ACS-2 revision 2 changed this to byte offsets. This made some 16-bit flag fields straddling across two bytes.

## 2 Scope

This proposal proposes a minor restructuring of the log to make it easy to describe a translation for the T10/SAT-3 project.

## 3 Overview

Basically, all 16-bit flag fields are split into two 8-bit flag fields

## 4 Changes to ACS-2

### 4.1 Changes to Annex A - Log Definitions

#### 0.1 Power Conditions (Log Address 08h)

If the Extended Power Conditions feature set is supported, then this non-volatile log shall be supported. If the Extended Power Conditions feature set is not supported, then this log shall not be supported.

##### 0.1.1 Power Conditions log descriptor

Table 0.2 defines the power conditions log descriptor. Each power condition has its own descriptor..

**Table 0.1 — Power Conditions Log descriptor**

<u>Byte Offset</u>	<u>Type</u>	<u>Description</u>
<u>0</u>	<u>Byte</u>	<u>Reserved</u>
<u>1</u>	<u>Byte</u>	<u>Power Condition Flags</u> <u>Bit Description</u> <u>7 Power Condition Supported</u> <u>6 Timer Saveable</u> <u>1= timer is saveable</u> <u>0= timer is not saveable</u> <u>5 Timer Changeable</u> <u>1= timer is changeable</u> <u>0= timer is not changeable</u> <u>4 Default Timer Enabled</u> <u>1= Default timer is enabled</u> <u>0= Default timer is disabled</u> <u>3 Saved Timer Enabled</u> <u>1= Saved timer is enabled</u> <u>0= Saved timer is disabled</u> <u>2 Current Timer Enabled</u> <u>1= Current timer is enabled</u> <u>0= Current timer is disabled</u> <u>1:0 Reserved</u>
<u>2..3</u>	<u>Byte</u>	<u>Reserved</u>

Table 0.1 — Power Conditions Log descriptor

<u>Byte Offset</u>	<u>Type</u>	<u>Description</u>
<u>4..7</u>	<u>DWord</u>	<p><u>Default Timer setting</u></p> <p><u>The Default Timer setting is the minimum time that the device shall wait after command completion before entering this power condition. A value of zero indicates that this power condition is disabled. A value of FFFF FFFFh indicates that the time is greater than or equal to 429 496 729 500 milliseconds.</u></p> <p><u>Measurement Units: 100 milliseconds.</u></p>
<u>8..11</u>	<u>DWord</u>	<p><u>Saved Timer setting</u></p> <p><u>The Saved Timer setting is the minimum time that the device shall wait after command completion before entering this power condition. A value of zero indicates that this power condition is disabled. A value of FFFF FFFFh indicates that the time is greater than or equal to 429 496 729 500 milliseconds.</u></p> <p><u>Measurement Units: 100 milliseconds.</u></p>
<u>12..15</u>	<u>DWord</u>	<p><u>Current Timer setting</u></p> <p><u>The Current Timer setting is the minimum time that the device shall wait after command completion before entering this power condition. A value of zero indicates that this power condition is disabled. A value of FFFF FFFFh indicates that the time is greater than or equal to 429 496 729 500 milliseconds.</u></p> <p><u>Measurement Units: 100 milliseconds</u></p>
<u>16..19</u>	<u>DWord</u>	<p><u>Nominal Recovery time to PM0:Active</u></p> <p><u>The Nominal Recovery time to PM0:Active is the nominal time required to transition from this power condition to PM0:Active. This time does not include processing time for the command that caused this transition to occur. A value of zero indicates that the nominal recovery time is not specified. A value of FFFF FFFFh indicates that the recovery time is greater than or equal to 429 496 729 500 milliseconds.</u></p> <p><u>Measurement Units: 100 milliseconds.</u></p> <p><u>This value shall be preserved over all resets.</u></p>
<u>20..23</u>	<u>DWord</u>	<p><u>Minimum timer setting</u></p> <p><u>The Minimum timer setting is the minimum timer value allowed by the Set Power Condition Timer subcommand for this power condition. A value of zero indicates that the minimum timer value is not specified. A value of FFFF FFFFh indicates that the minimum timer value is greater than or equal to 429 496 729 500 milliseconds.</u></p> <p><u>Measurement Units: 100 milliseconds</u></p> <p><u>This value shall be preserved over all resets</u></p>
<u>24..27</u>	<u>DWord</u>	<p><u>Maximum timer setting</u></p> <p><u>The Maximum timer setting is the maximum timer value allowed by the Set Power Condition Timer subcommand for this power condition. A value of zero indicates that the maximum timer value is not specified. A value of FFFF FFFFh indicates that the maximum timer value is greater than or equal to 429 496 729 500 milliseconds.</u></p> <p><u>Measurement Units: 100 milliseconds</u></p> <p><u>This value shall be preserved over all resets</u></p>
<u>28..63</u>	<u>Byte</u>	<u>Reserved</u>

**0.1.2 Power Conditions log page 00h**

Table 0.2 defines page 00h of the the power conditions log.

**Table 0.2 — Power Conditions Log (page 00h)**

<u>Byte Offset</u>	<u>Type</u>	<u>Description</u>
<u>0..63</u>	<u>Byte</u>	<u>Idle a power conditions descriptor (see table 0.1)</u> <u>Power condition supported shall be set to one to indicate that the Idle a power condition is supported.</u>
<u>64..127</u>	<u>Byte</u>	<u>Idle b power conditions descriptor (see table 0.1)</u>
<u>128..191</u>	<u>Byte</u>	<u>Idle c power conditions descriptor (see table 0.1)</u>
<u>192..511</u>		<u>Reserved</u>

**0.1.3 Power Conditions log page 01h**

Table 0.3 defines page 01h of the the power conditions log.

**Table 0.3 — Power Conditions Log (page 01h)**

<u>Byte Offset</u>	<u>Type</u>	<u>Description</u>
<u>0..383</u>		<u>Reserved</u>
<u>384..447</u>	<u>Byte</u>	<u>Standby y power conditions descriptor (see table 0.1)</u>
<u>448..511</u>	<u>Byte</u>	<u>Standby z power conditions descriptor (see table 0.1)</u> <u>Power condition supported shall be set to one to indicate that the Standby z power condition is supported.</u>