

»Kontron Application Note«



CP6014: IPMI Sensor User Guide

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Scope

This document's main purpose is to show how to analyze and understand events generated by sensors of the CP6014 (and RTM6014) which are stored in the System Event Log (SEL).

Typical situations in which the SEL needs to be consulted are as followed:

- Unexpected shutdown or reboot
- Front plate LEDs showing abnormality
- Any unusual behavior

In many cases, analyzing the SEL will allow to determine the root cause of the events and provide essential guidance in determining either preventive or corrective action.

This document also contains all the information needed to understand sensor readings. Readings provide useful information on the board's status. (e.g.: Current POST code)

In order to be able to accomplish these tasks, the user will first be introduced to "Sensors" as defined in the *IPMI* specification v2.0. Once the first level knowledge has been acquired, detailed information will be provided on how to analyze and interpret the data collected from these sensors with tools such as *ipmitool* and Pigeon Point's *clia*. Last but not least, "Annex A" presents a detailed list of all the sensors implemented on the CP6014 and RTM6014.

1. Sensor Introduction

Sensor Model

"Access to monitored information, such as temperatures and voltages, fan status, etc., is provided via the IPMI Sensor Model. Instead of providing direct access to the monitoring hardware IPMI provides access by abstracted sensor commands, such as the Get Sensor Reading command, implemented via a management controller. This approach isolates software from changes in the platform management hardware implementation.

Sensors are classified according to the type of readings they provide and/or the type of events they generate. A sensor can return either an analog or discrete reading. Sensor events can be discrete or threshold-based.

The different event types, sensor types, and monitored entities are represented using numeric codes defined in the IPMI specification. IPMI avoids reliance on strings for management information. Using numeric codes facilitates internationalization, automated handling by higher level software, and reduces management controller code and data space requirements. "¹

For the purpose of this document, the two most important characteristics of a sensor are:

- Event/Reading Type
- Sensor Type

CP6014: Sensor User Guide v1.0

¹ IPMI v2.0 Section 1.7.5 p:13

Sensor Classes

Sensors fall into the following classes:

Discrete:

- These are *State Sensors*. The reading they return contains two bytes where each bit can represent a unique state.
- Up to 15 possible states (not 16 since bit15 from the returned reading is reserved)
- More than one state may be active simultaneously.
- Events are generated by a unique state. Thus, *Event Messages* do not return a bit field, just a single offset value corresponding to a single event.

'Digital' Discrete:

• A digital sensor is not really a unique class, but a term commonly used to refer to special case of a discrete sensor that only has two possible states.

Threshold:

- Threshold based.
- Changes event status on reading comparison to threshold values.
- Threshold enumerations may be considered a special case of the discrete sensor type.

OEM:

• Special case of discrete where the meanings of the state's (offsets) are *OEM* defined.

Event/Reading Type

"Event/Reading Type codes are used in SDRs (sensor data records) and Event Messages to indicate the trigger type for an event. These codes are also used in SDRs to indicate what types of present reading a sensor provides.

Event/Reading Type Codes are used to specify a particular enumeration (offset) that identifies a set of possible events that can be generated by a sensor. For "Discrete" sensors, the specification of an Event/Reading Type code enumeration also indicates the type of reading the sensor provides."²

Event/Reading Type are listed in the following Table.

Event/Reading Type Code category	7-bit Event/Reading Type Code Range	Sensor Class	Description
unspecified	00h	n/a	Event/Reading Type unspecified.
Threshold	01h	threshold	Threshold-based. Indicates a sensor that utilizes values that represent discrete threshold states in sensor access and/or events. The Event/Reading event offsets for the different threshold states are given in Table 42-2, Generic Event/Reading Type Codes, below.
Generic	02h-0Ch	discrete	Generic Discrete. Indicates a sensor that utilizes an Event/Reading Type code & State bit positions / event offsets from one of the sets specified for Discrete or 'digital' Discrete Event/Reading class in Table 42-2. Generic Event/Reading Type Codes below.
Sensor-specific	6Fh	discrete	Sensor-specific Discrete. Indicates that the discrete state information is specific to the sensor type. State bit positions / event offsets for a particular sensor type are specified in the 'sensor-specific offset' column in Table 42-3, Sensor Type Codes, below.
OEM	70h-7Fh	OEM	OEM Discrete. Indicates that the discrete state information is specific to the OEM identified by the Manufacturer ID for the IPM device that is providing access to the sensor.

Table 1: "Event/Reading Type" Code Ranges³

Sensor Type

"Discrete" sensors defined with an *Event/Reading Type* 6Fh (Sensor-specific) will use *"Sensor-Specific"* definition for their offset and *"Event Data"*. *"Sensor-specific"* definition is available for many *"Sensor Type"* and may be "0EM" defined for *OEM sensor types*.

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² IPMI v2.0 Section 42.1, p:498

³ IPMI v2.0 Table 42-1, Event/Reading Type Code Ranges, p:499

Sensor Reading

Reading from a sensor is available through the *"Get Sensor Reading"* command. All other more complex commands which provide sensor reading use this raw command. Therefore, it is important to understand the format in which data is returned.

Request Data	1	sensor number (FFh = reserved)
esponse Data	1	Completion Code.
	2	Sensor reading
	22	Byte 1: byte of reading. Ignore on read if sensor does not return an numeric (analog) reading.
	3	 [7] - 0b = All Event Messages disabled from this sensor [6] - 0b = sensor scanning disabled [5] - 1b = reading/state unavailable (formerly "initial update in progress"). This bit is set to indicate that a 're-arm' or 'Set Event Receiver' command has been used to request an update of the sensor status, and that update has not occurred yet. Software should use this bit to avoid getting an incorrect status while the first sensor update is in progress. This bit is only required if it is possible for the controller to receive and process a 'Get Sensor Reading' or 'Get Sensor Event Status' command for the sensor before the update has completed. This is most likely to be the case for sensors, such as fan RPM sensors, that may require seconds to accumulate the first reading after a re-arm. The bit
		is also used to indicate when a reading/state is unavailable because the management controller cannot obtain a valid reading or state for the monitored entity, typically because the entity is not present. See Section 16.4, Event Status, Event Conditions, and Present State and Section 16.6, Re-arming for more information.
	(4)	[4:0] - reserved. Ignore on read.
	(4)	For threshold econoris
	100	[7:6] reserved Returned as the langer on read
		[7.0] - Teserved, Neturned as 10, ignore on recoverable threshold
		 (a) - at or above (2) upper non-recoverable uneshold (4) the st or above (2) upper acting threshold
		[4] - Ib = at or above (2) upper chucal threshold
		[5] - Ib = at or above (2) upper non-crucal trieshold
		[2] - 1b = at or below (\leq) lower non-recoverable threshold
		[1] - 1b = at or below (≤) lower critical threshold
		[0] - 1b = at or below (≤) lower non-critical threshold
		For discrete reading sensors
		[7] - 1b = state 7 asserted
		[6] - 1b = state 6 asserted
		[5] - 1b = state 5 asserted
		[4] - 1b = state 4 asserted
		[3] - 1b = state 3 asserted
		[2] - 1b = state 2 asserted
		[1] - 1b = state 1 asserted
		[0] - 1b = state 0 asserted
	(5)	For discrete reading sensors only. (Optional)
		[7], reserved Returned as the lonore on read
	1.11	[6] _ 1h = state 14 asserted
A		[5] th = state 13 accented
		[4] th - state 12 asserted
		[3] th - state 11 secarted
		[2] th - state 10 asserted
		[1] th - state 0 asserted
	1.1.1	[1] - Ib - state 9 asserted
		[u] - in - state o deserted

Table 2: "Get Sensor Reading" Command⁴

Completion Code:

Will not be displayed if the Request Message completes successfully and normally.

Byte 1: Sensor Reading

- For "Discrete" Sensors, will return 00h
- For "Threshold" based sensors, will return the analog reading. This value is coded according to the *Event/Reading Type* and/or *Sensor type*. Tools such as *ipmitool* provide commands which will decode this information in a human readable format.

⁴ IPMI v2.0 Table 35-15, Get Sensor Reading Command, p:464

Byte 2:

• Provides information on the sensor

Byte 3:

- For "Threshold" based sensor: Indicates were the reading stands against the threshold values.
- For "Discrete" sensors: Indicates which sensor offsets (states) are asserted for offset 00h to 07h.

Byte 4:

- For "Threshold" based sensor: 80h (since bit 7 is always 1b)
- For "Discrete" sensors: Indicates which sensor offsets (states) are asserted for offset 08h to 14h.

NOTE: Sensors have a reading mask which is "OEM" defined. This is used to ignore unused states during reading. Therefore, if a state that should be asserted is not read, the "Reading Mask" should be verified.

Event Data

When a sensor changes state, an *"Event Message"* is sent to the SEL only if the *"Event Mask"* indicates that the new state must generate an event.

The *"Event Data"* contains 3 bytes where only the first byte is used. The signification of these bytes is listed in *"Annex A"* for every sensors implemented on the AT8020 and RTM8020.

Entity

"An Entity ID is a standardized numeric code that is used in SDRs to identify the types of physical entities or FRUs in the system"⁵

In the case of the CP6014, up to 2 entities can be present:

- FRUO PICMG Front Board (the board itself)
- FRU1 PICMG Rear Transition Module (RTM)

⁵ IPMI v2.0 Section 39, p:488

Sensor ID

Sensors have a numerical ID used to identify them. The sensor ID as seen in the list from "Annex A" might not be the same in particular cases.

The reason is that the sensor ID's are determined during the board's activation according to the order in which the entities are activated. First sensors to be designated an ID are the ones populated on *FRUO* (Entity: PICMG Front Board). Afterwards, it depends on which entity is the first to ask for activation. Therefore, the RTM's sensors might have an offset compared to the IDs from the "Annex A" list.

The consequence is that only sensor should not be referred by a specific numerical ID but rather by their sensor name (*e.g.: "FW Upg Mng",...*).

2. ipmitool

This section does not list all commands that can be used to get information on sensors. However, these commands provide most of the relevant information.

ipmitool can be obtained at: http://ipmitool.sourceforge.net/

"Get Sensor Reading" Command

This PICMG command, introduced in previous section, can be used by raw command:

ipmitool raw 0x04 0x2d <id>

- 0x04: Network function Code for Sensor Event
- 0x2d: Get Sensor Reading command
- <id>: Sensor ID

Sensor Command

This command provides various information on the board's sensors. It is also the only command (excluding raw commands) that lists the reading "Data Byte" 3 and 4 (see "Sensor Reading" from section "1. Sensor Introduction"). Other *ipmitool* command provides sensor reading "Data Byte" 3.

ipmitool sensor

Sensor	Analog Reading	Туре	Reading Byte 3&4			Thresh	old Values		
IPMC Storage Err	0x0	discrete	0x0080	na	na	na	na	na	na
IPMC SEL State	0x0	discrete	0x0080	na	na	na	na	na	na
ME Availability	0x0	discrete	0x4280	na	na	na	na	na	na
Jumper Status	0x0	discrete	0x0080	na	na	na	na 🛛	na	na
IPMI Info-1	0x0	discrete	0x0080	na	na	na	na	na	na
IPMI Info-2	0x0	discrete	0x0080	na	na	na	na	na	na
RTM: IPMI Info-2	0x0	discrete	0x0080	na	na	na	na 🛛	na	na
RTM: IPMI Info-1	0x0	discrete	0x0080	na	na	na	na	na	na
RTM:MMC Stor Err	0x0	discrete	0x0080	na	na	na	na	na	na
RTM:MMC FwUp	dixo i	discrete	0x0080	na	na	na	na	na	na
RTM:MMC Reboot	0x0	discrete	0x0180	na	na	na	na	na	na
RTM:FRU Agent	0x0	discrete	0x0180	na	na	na	na	na	na
RTM: IPMBL State	0x88	discrete	0x0880	na	na	na	na	na	na
RTM:Ver Change	0x0	discrete	0x0080	na	na	na	na	na	na
RTM:Health Error	0x0	discrete	0x0180	na	na	na	na	na	na
RTM: Pwr Good Ev	0x0	discrete	0x4780	na	na	na	na	na	na
RTM:Power Good	0x0	discrete	0x4780	na	na	na	na	na	na
RTM:Power State	0x0	discrete	0x0180	na	na	na	na	na	na
RTM:Disk Bay	0x0	discrete	0x0480	na	na	na	na	na	na
RTM:USB1 OC	0x0	discrete	0x0180	na	na	na	na	na	na
RTM:USBO OC	0x0	discrete	0x0180	na	na	na	na	na	na
RTM:SFP-B OC	0x0	discrete	0x0180	na	na	na	na	na	na
RTM:SFP-B Pres	0x0	discrete	0x0080	na	na	na	na	na	na
RTM:SFP-A OC	0x0	discrete	0x0180	na	na	na	na	na	na
RTM:SFP-A Pres	0x0	discrete	0x0080	na	na	na	na	na	na
RTM:Vcc +12VDisk	12.100	Volts		10.560	11.165	na	na	12.870	13.475
RTM:Vcc +12V	10.899	Volts		0.000	10.395	na	na	14.301	16.002
RTM:Vcc BlueLED	6.612	Volts		3.876	5.814	na	na	7.410	9.424
RTM:Vcc +1.2V	1.197	Volts		0.000	1.121	na	na	1.285	1.588
RTM:Vcc +5V	5.079	Volts		0.000	4.666	na	na	5.346	6.124
RTM:Vcc +3.3V	3.296	Volts		0.000	3.072	na	na	3.536	4.032
RTM:Vcc +3.3VSUS	3.298	Volts		0.000	2.941	na	na	3.672	4.335
RTM: Temp MMC	27.000	degrees C		-20.000	-10.000	-5.000	60.000	70.000	80.000
RTM: Temp SASCtrl	56.000	degrees C		-20.000	-10.000	-5.000	105.000	115.000	125.000
RTM: Temp Air Out	37.000	degrees C			0.000	5.000	60.000	70.000	80.000
RTM: Temp Air In	27.000	degrees C	ok	-10.000	0.000	5.000	1 60.000	70.000	80.000

Figure 1: "ipmitool sensor" command

*This example was made using an AT8050

Sdr Command

The following command will provide additional information on sensors.

ipmitool sdr list -v

```
Figure 2: "ipmitool sdr list -v" Command
```

```
Sensor ID
                           : RTM:SFP-A OC (Ox82)
                           : 192.96 (PICMG Rear Transition Module)
Sensor Type (Discrete): Current
                            [State Deasserted]
Assertions Enabled : Digital State
                              [State Asserted]
Deassertions Enabled : Digital State
                             [State Asserted]
               : RTM:SFP-A Pres (0x81)
Entity ID : 192.96 (PICMG Rear Transition Module)
Sensor Type (Discrete): Slot / Connector
                             [Fault Status]
                              [Fault Status]
                              [Device Installed]
                       : RTM:Vcc +12VDisk (0x80)
Sensor ID
                         : 192.96 (PICMG Rear Transition Module)
Entity ID
Sensor Type (Analog) : Voltage
Sensor Reading : 12.100 (+/- 0.220) Volts
Status: okNominal Reading: 11.990Normal Minimum: 11.165Normal Maximum: 12.870
Positive Hysteresis : 0.495
Negative Hysteresis : 0.495
Minimum sensor range : Unspecified
Maximum sensor range : Unspecified
Event Message Control : Per-threshold
Readable Thresholds : lnr lcr ucr unr
Settable Thresholds : lnr lcr ucr unr
Threshold Read Mask : Inr lcr ucr unr
Assertions Enabled : lcr- lnr- ucr+ unr+
Deassertions Enabled : lcr- lnr- ucr+ unr+
```

*This example was made using an AT8050

Sel Command

The "ipmitool sel" command shows the sensor's NAME and ID and reports in a human readable format the "Event Data". In some cases, *ipmitool* is not able to analyze the "Event Data" and will print "Event Data" 1,2 and 3. When this happens, the "Annex A"'s list should be used to decode these bytes.

ipmitool sel list

Figure 3: "ipmitool sel list" Command

134	11/03/2009	14:55:15	Voltage #0x6b Lower Critical going low
135	11/03/2009	14:55:19	FRU Hot Swap #0x02 Transition to M4 Asserted
136	11/03/2009	14:55:20	FRU Hot Swap #0x03 Transition to M4 Asserted
137	11/03/2009	14:55:21	FRU Hot Swap #0x01 Transition to M4 Asserted
138	11/03/2009	14:55:29	Version Change #0x51 Firmware or software change detected Asserted
139	11/03/2009	14:55:33	Reset #0x43 State Asserted
13a	11/03/2009	15:08:27	System ACPI Power State #0x4e S0/G0: working Asserted
13b	11/03/2009	15:56:59	Reset #0x43 State Asserted
13c	11/03/2009	15:56:59	Reset #0x43 State Asserted
13d	11/03/2009	15:57:33	Reset #0x43 State Asserted
13e	11/03/2009	15:59:00	Reset #0x43 State Asserted
13f	11/03/2009	16:18:22	Reset #0x43 State Asserted
140	11/03/2009	16:19:16	System ACPI Power State #0x4e S0/G0: working Asserted
141	11/03/2009	16:22:57	Reset #0x43 State Asserted
142	11/03/2009	16:22:57	Reset #0x43 State Asserted
143	11/03/2009	16:23:58	System ACPI Power State #0x4e S0/G0: working Asserted
144	11/03/2009	16:26:13	Reset #0x43 State Asserted
145	11/03/2009	16:26:14	Reset #0x43 State Asserted
146	11/03/2009	16:26:33	Reset #0x43 State Asserted
147	11/03/2009	16:27:45	Reset #0x43 State Asserted
148	11/03/2009	16:29:26	System ACPI Power State #0x4e S0/G0: working Asserted
149	11/03/2009	20:56:15	IPMB-O Status #0x53 IPMB-A enabled, IPMB-B disabled Asserted
14a	11/03/2009	20:56:26	IPMB-O Status #Ox53 IPMB-A enabled, IPMP-B enabled Asserted
1.771			

*This example was made using an AT8050

3. Example

Examples from this section where made using an AT8050.

Analyzing the SEL

Whenever an unusual situation is reported, the SEL should be consulted:

SEL Event Example: 112 | 11/02/2009 | 09:11:14 | FW Ver Change #0x51 | 0xC1 0x09 0xFF

The sensor can be found in "Annex A" list by running a search for FW Ver Change:

Sens or ID	Sensor Name / Entity (ID)	Event/Reading Type (Class and Code) / Sensor Type (Code)	Offset	Data Byte 1	Data Byte 2	Data Byte 3
81	FW Ver Change / PICMG Front Board (160.96)	Sensor-specific (Discrete 0x8) / Version Change (0x2b)	00h (b0.); Hardware change detected with associate Entry, Informational. This offset does not imply whether the hardware change was successful or not. Only that a change cocurred with associated Ently. Informational. Success or GAI/b (b1): Firmware or software change detected with associated Ently. Informational. Success or GAI/b (b1): Hardware incompatibility detected with associated Ently. Most and the success of BAI/b (b1): Birmware or software incompatibility detected with associated Ently. DM (b1): bir Ently contains an invalid or unsupported firmware or software version. DM (b1): Ently contains an invalid or associated Ently was constant version. DM (b1): Software Change detected with associated Ently was successful, (deassertion event means 'unsuccessful')	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = 0EM code in byte 2 11b = sensor-specific event extension code in byte 2 (5:4] - 00b = unspecified byte 3 01b = 0EM code in byte 3 11b = sensor-specific event extension code in byte 3 (3:0] - Offset from Event/Reading Code for discrete event state	bit(7.0) Version change spe 00th unspecified 00th unspecified 00th unspecified 00th anagement controller device ID (change in one or more fields from 'Get Device ID') 02th management controller firmware revision 04th management controller firmware iD 05th management controller firmware iD 05th management controller firmware iD 07th management controller firmware iD 07th management controller firmware 08th other management controller firmware 08th system firmware (ET / BIOS) shange 08th system system foader change 08th operating system foader change 08th operating system foader change 08th operating system foader change 08th operating system foader change 10th management software sagent change 10th management software widelevace change 11th programmable hardware change (e.g. FPGA) 12th board(FRU component) change of a module plugged into associated entity) 13th board(FRU component) change of a module plugged into associated entity)	FFh

Let's analyze the "Event Data":

Event Data 1: 0xC1 0xC1 = 1100 0001 Bit[7:6] = 11b : sensor-specific event extension code in byte 2 Bit[5:4] = 00b : unspecified byte 3 Bit[3:0] = 00001b : offset from Event/Reading code (offset which triggered the event) → 01h (bit 1): Firmware or software change detected with associated Entity. Informational. Success or failure not implied.

Event Data 2: 0x09

bit[7:0]: Version change type → system firmware (EFI / BIOS) change

Read a "discrete" sensor

In some cases, it can be useful to consult a discrete sensor's "State". For example, to know which jumpers are installed on a board without pulling it out of the chassis, the "Jumper Status" sensor should be consulted.

To do so, use the *"ipmitool sensor"* command or the raw "Get Sensor Reading" command. These commands will provide "Reading Byte" 3&4 (which correspond to "Response Data Byte" 4&5 as shown section "1. Sensor Introduction"). To analyze the reading, table 2 and the offset column on *"Annex A"* should be consulted.

Example: Reading Bytes 3&4 = 0xA193 for the "Jumper Status" sensor.

Meaning:

0xA193 = 1010 0001 1001 0011

- 00h (bit 0): Jumper 00 Present (JP1: 1-2)
- 05h (bit 5): Jumper 05 Present (JP1: 11-12)
- 07h (bit 7): Jumper 07 Present (JP2: 1-2)
- 08h (bit 8): Jumper 08 Present (JP2: 3-4)
- 09h (bit 9): Jumper 09 Present (JP2: 5-6)
- 0Ch (bit 12): Jumper 12 Present (JP2: 11-12)

Annex A – List of CP6014/RTM6014 sensors

Sens or ID	Sensor Name / Entity (ID)	Event/Reading Type (Class and Code) / Sensor Type (Code)	Description	Offset	Data Byte 1	Data Byte 2	Data Byte 3
0	Hot Swap / PICMG Front Board (160.96)	Sensor-specific (Discrete 0X6f) / PICMG FRU Hotswap (0xf0)	cTCA Board FRU HotSwap Sensor.	Oh, Doi TO, Mu – FRU Not Installed The Dri TM – FRU Not Installed The Dri TM – FRU Activation Request Sho Bay, Ma – FRU Activation Regress Ah, Dat AH, Ma – FRU Activation Infogress Ah, Dat AH, Ma – FRU Activation Infogress Ah, Data AH, MA – FRU ACtivation Ah, Data AH, MA –	[7:4] = Ah (CEM code in Event Data 2, OEM code in Event Data 3) [3:0] = Current State [0:h M0 - FRU Nat/ Installed [1:h M1 - FRU Installed [2:h M3 - FRU Actions request [2:h M3 - FRU Actions for progress [3:h M5 - FRU Deachvelon In Progress	bit[7-1] - Cause of state change. See, "Cause of state change values," for values, (Annex C) bit[3:0] = Pravious State (h = Mo - FRU Not Installed h = Mo - FRU Andreaon Request 3h = M3 - FRU Admission In Progress 4h = M4 - FRU Admission In Progress 6h = M6 - FRU Deactivation Nerguest 6h = M6 - FRU Deactivation Nerguest 6h = M6 - FRU Deactivation Norgens 7h = M7 - FRU Comminication Lost 6h - Fh = Reserved	bi([7:0] = FRU Device ID
1	Temp Air In / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	Air Inlet Temperature	Threshold Values: Ohn : Lover Non-critical - going low Ohn : Lover Non-critical - going high Ozi : Lover Critical - going high Ozi : Lover Critical - going high Ozi : Lover Non-coverable - going high Ozi : Loper Critical - going high Ozi : Loper Non-coverable - going high	[76] - 00b - unspecified type 2 01b - trigger reading in type 2 10b - to CEM code in type 2 11b - semax-pecific event extension code in type 2 [54] - 00b - unspecified type 3 10b - trigger transhold value in type 3 11b - semax-pecific event extension code in type 3 11b - semax-pecific event extension code in type 3 Bit [3:0] = Offset from Event/Reading Code for threshold event.	Reading flash triggered the event, FFh or not present if unspecified.	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
2	Temp CPU 0 / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	CPU 0 Temperature	Threehold Values: Oh.: Lover Non-critical - going low Oh.: Lover Kon-critical - going high Oh.: Lover Critical - going high Oh.: Lover Critical - going high Oh.: Lover Non-recoverable - going low Oh.: Lover Non-recoverable - going low Oh.: Loper Critical - going high Oh.: Loper Kon-recoverable - going high	[7:6] -00b = unspecified type 2 01b = trigger reading in type 2 11b = sersor-specific event extension code in byte 2 11b = sersor-specific event extension code in byte 2 [5:4] -00b = unspecified type 3 11b = sersor-specific event extension code in byte 3 11b = sersor-specific event extension code in byte 3 Bit [3:0] = Offset from Event/Reading Code for threshold event.	Reading that triggered the event. FPh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event. FFh or not present if unspecified. If present, Event Data 2 must be present
3	Temp CPU 1 / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	CPU 1 Temperature	Threahold Values: Oh.: Lower Non-critical - going low Oh.: Lower Kont-critical - going high Ozi.: Lower Critical - going high Odi.: Lower Konteceverable - going low Obi.: Lower Non-recoverable - going high Obi.: Upper Non-critical - going high Obi.: Upper Non-critical - going high Obi.: Upper Critical - going high Obi.:	[7:6] 0.0b unspecified type 2 10b - OEM code in byte 2 11b - smoor-specifie event extension code in byte 2 [5:4] -0.0b -unspecified byte 3 10b - smoor-specifie event extension code in byte 3 10b - smoor-specifie event extension code in byte 3 11b - smoor-specifie event extension code in byte 3 11b - smoor-specifie event extension code in byte 3 11b - smoor-specifie event extension code in byte 3 11b - smoor-specifie event extension code in byte 3 11b - smoor-specifie event extension code in byte 3 12t - Smoor-specifie event extension code in byte 3 13t - Smoor-specifie event extension code in byte 3	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FPh or not present if unspecified. If present, Event Data 2 must be present
4	Temp MCH / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	MCH Temperature	Threathold Values: Ohn Lower Non-critical - going low Ohn Lower Non-critical - going high Obn Lower Christical - going Num Obn Lower Christical - going Num Obn Lower Non-ecoverable - going Num Obn Lower Non-ecoverable - going Num Obn Lower Non-ecoverable - going Num Obn Lopen Non-critical - going Num Obn Lopen Non-critical - going Num Obn Lopen Non-ecoverable - going Num Num Num Num Num Num Num Num Num Num Num	[7:6]: Obs - unspecified type 2 01b - togger maining in type 2 10b - togger maining in type 2 11b - sensor-peptific event extension code in type 2 [5:4]: Obs - unspecified type 3 01b - togger threshold value in type 3 10b - cEM code in type 3 10b - betward threshold value in type 3 10b - betward period threshold value in type 3 11b - sensor-peptific event extension code in type 3 11b - sensor-peptific event extension code in type 3 Bit (3:0) = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threahold value that triggered event. FFh or not present if unspecified. If present, Event Data 2 must be present
5	Temp LANMgt / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	Front Plate Management LAN Temperature	Threshold Values: Ohn Lower Non-critical -going low Ohn Lower Non-critical -going high Obn Lower Critical - going high Obn Lower Critical - going high Obn Lower Non-recoverable - going high Obn Lower Non-recoverable - going high Obn Lopen Non-critical -going high Obn Lopen Non-critical -going high Obn Lopen Critical - going high Obn Lopen Critical - g	[76]: Odo = unspecified type 2 OfD = trigger reading in type 2 10b = toEM code in type 2 11b = sensor-specifie event extension code in type 2 [5:4]: Odo = unspecified type 3 01b = trigger threshold value in type 3 10b = oEM code in type 3 11b = sensor-specified type 4 11	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFn or not present if unspecified. If present, Event Data 2 must be present
6	Temp LAN BP / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	Ophir Dual LAN (to backplane 2.16) Temperature	Threshold values: Oh. Lover Non-critical -going low Oh. Lover Non-critical -going high Ob. Lover Critical - going high Ob. Lover Critical - going high Ob. Lover Non-coverable - going high Ob. Lover Non-critical -going high Ob. Lover Non-critical -going high Ob. Loper Non-critical -going high Ob. Loper Non-critical - going high Ob. Loper Non-critical - going high Ob. Loper Non-coverable - going high Ob. Loper Non-recoverable - going high Ob. Loper Non-recoverable - going high Ob. Loper Non-recoverable - going high	[76]: Odo = unspecified tyte 2 01b = trigger reading in tyte 2 10b = OEM code in tyte 2 11b = sensor-specific event extension code in tyte 2 [5:4]: Obo = unspecified tyte 3 01b = trigger threshold value in tyte 3 10b = oEM code in tyte 3 11b = sensor-specific event watersion code in tyte 3 10b = trigger threshold value in tyte 3 11b = sensor-specific event watersion code in tyte 3 11b = sensor-specific event watersion code in tyte 3 Bit (3:0) = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FPh or not present if unspecified. If present, Event Data 2 must be present
7	Temp VGA / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	VGA Temperature	Threshold Values: Oh. : Lower Non-critical -going low Oh. : Lower Non-critical -going high Ob. : Lower Critical - going high Ob. : Lower Critical - going high Ob. : Lower Non-ecoverable - going low Ob. : Lower Non-ecoverable - going low Ob. : Upper Non-critical - going high Ob. : Upper Non-critical - going high Oh. : Upper Chical - going high Oh. : Upper Non-ecoverable - going high	[76]: Odo = unspecified tyte 2 01b = trigger reading in tyte 2 10b = OEM code in tyte 2 11b = sensor-specifie event extension code in tyte 2 [5:4]: Obo = unspecified tyte 3 01b = trigger threshold value in tyte 3 10b = code in tyte 3 11b = sensor-specific event extension code in tyte 3 11b = code - noped in twee textension code in tyte 3 11b = code - noped in twee textension code in tyte 3 11b = sensor-specific event extension code in tyte 3 12f [3:0] = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threahold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
8	Temp HDD / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	Storage HDD area Temperature	Threehold Values: Oh.: Lower Non-critical -going low Oh.: Lower Christial-going Nu Oh.: Lower Christial-going Nu Oh.: Lower Christial-going Nu Oh.: Lower Non-coverable -going Nu Oh.: Lower Non-coverable -going Nu Oh.: Lower Non-coverable -going Nu Oh.: Loper Christial-going Nu Oh.: Loper Christial-going Nu Oh.: Loper Christial-going Nu Oh.: Loper Non-recoverable -going Nu Oh.: Loper Non-recoverable -going Nu Nu	[7:6]: OOb = unspecified type 2 (10b = rotgoer reading in type 2 (10b = OEM code in type 2 (10b = orspecified vert extension code in type 2 [5:4]: OOb = unspecified type 3 (10b = rotgoer trenshold value in type 3 (10b = OEM code in type 3 (10b	Reading that triggered the event, FFh or not present if umpofiled. Do not confuse reading with Threshold Value	threshold value that triggered event, FPh or not present if unspecified. If present, Event Data 2 must be present
9	Temp DIMM / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	DIMM area Temperature	International Values: Ohn : Lower Non-critical - going low Ohn : Lower Non-critical - going high Ozin : Lower Critical - going high Ozin : Lower Critical - going high Ozin : Lower Non-toxenetable - going low Ozin : Lower Non-toxenetable - going high Differ : Upper Critical - going high Oth : Upper Non-recoverable - going high Differ : Upper Non-recoverable - going high	(r/o; -vuo = unspecified tyte 2 (10 = bridge reading in tyte 2 (10 = bridge reading in tyte 2 (10 = bridge reading in tyte 2 (15.4) = 00 = unspecified tyte 3 (10 = bridge translatid value in byte 3 (10 = bridge translatid value in byte 3 (11 = sensor specific event extension code in byte 3 Bit (3:0) = Offset from Event/Reading Code for threshold event.	reaang that traggered the event, FFh or not present if unspecified.	umesnotid value that troggered event, FFh or not present if unspecified. If present, Event Data 2 must be present

Sens or ID	Sensor Name / Entity (ID)	Event/Reading Type (Class and Code) / Sensor Type (Code)	Description	Offset	Data Byte 1	Data Byte 2	Data Byte 3
10	Temp Sw 1v8 / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Temperature (0x01)	Switch 1.8 volts Temperature	Threshold Values: Oth : Lower Non-critical - going low Oth : Lower Non-critical - going high Ozh : Lower Critical - going nigh Odh : Lower Non-recoverable - going high Oth : Lower Non-recoverable - going high Oth : Lower Non-recoverable - going high Oth : Upper Non-critical - going high Oth : Upper Non-crotical - going high	[7:6]: Odb = unspecified byte 2 Olb = togst reading in tyte 2 10b = togst reading in tyte 2 11b = sensor-peolific event extension code in byte 2 [5:4]: Odb = unspecified byte 3 01b = togst threshold value in byte 3 10b = odb = respective event extension code in byte 3 10b = togst threshold value in byte 3 11b = sensor-specific event extension code in byte 3 11b = sensor-specific event extension code in byte 3 11b = sensor-specific event extension code in byte 3 11b = sensor-specific event extension code in byte 3 11b = sensor-specific event extension code in byte 3 11b = sensor-specific event extension code in byte 3 12b = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if unspectified. Do not confuse reading with Threshold Value	threshold value that triggered event. FFh or not present if unspecified. If present, Event Data 2 must be present
11	Pwr Good / PICMG Front Board (160.96)	OEM (Discrete 0x77) / Power Supply (0x08)	Actual power status	00h (h0 k); Reserved 02h (h1 k); Reserved 02h (h1 k); Reserved 04h (h1 k); Reserved 04h (h1 k); Reserved 04h (h1 k); VecCload 14V 04h (h1 k); VecCload 12V 07h (h1 r); VecCload 12V 07h (h1 r); VecCload 12V 04h (h1 k); Reserved 04h (h	 (7:6): 00b - unspecified byte 2 01b - providus state and/or sevenity in byte 2 10b - OEM code in byte 2 11b - sensor-specific event attansion code in byte 2 (5:4): 00b - unspecified byte 3 10b - OEM code in byte 3 11b - sensor-specific event attansion code in byte 3 (3:0) - Offset from Event/Reading Code for discrete event state 	-	-
12	Pwr Good Ev / PICMG Front Board (160.96)	OEM (Discrete 0x77) / Power Supply (0x08)	Power status event that occur since the last power on or reset.	Ohn (bit 0); Reserved Ohn (bit 1); Reserved O2h (bit 2); Reserved O3h (bit 3); Reserved O4h (bit 4); VocGood 1, 8V O5h (bit 3); Reserved O7h (bit 7); VocGood 1, 8V O8h (bit 4); VocGood 1, 8V O8h (bit 4); VocGood 1, 8V O8h (bit 7); VocGood CPU0 O8h (bit 9); VocGood 1, 1V O4h (bit 1); Reserved O6h (bit 1); Reserved O6h (bit 1); VocGood V1	 [76]: Olo – unspecified tyte? [76]: Olo – unspecified tyte? [10] – previous state and/or sevenity in byte? [10] – semison-specific event estamision code in byte? [54]: Olo – unspecified tyte? [11] – semison-specific event astension code in byte 3 [11] – semison-specific event astension code in byte 3 [3:0] – Offset from Event/Reading Code for discrete event state 		-
13	VCORE 0 / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	CPU 0 Core Voltage	Threahold Values: Oh: Lower Non-critical -going low Oh: Lower Non-critical -going high O2h: Lower Critical -going high O4h: Lower Non-recoverable -going low O5h: Lower Non-recoverable -going low O5h: Loper Non-recoverable -going high O6h: Upper Non-critical -going high O7h: Upper Non-critical -going high O4h: Upper Non-critical -going high O4h: Upper Non-critical -going high O4h: Upper Non-recoverable -going high O4h: Upper Non-recoverable -going high O4h: Upper Non-recoverable -going high	[76]: Odo = unspecified type 2 O1b = trigger reading in type 2 10b = OEM code in type 2 11b = sensor-specific event extension code in type 2 [5:4]: Obo = unspecified type 3 01b = trigger threshold value in type 3 10b = oEM code in type 3 11b = sensor-specific event extension code in type 3 11b = oEM code in type 3 11b = sensor-specific event extension code in type 3 11b = oEM code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3	Reading that triggered the event, FPh or not present if umportind. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
14	VCORE 1 / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	CPU 1 Core Voltage	Threehold Values: 00h : Lower Non-critical -going high 02h : Lower Christial - going high 02h : Lower Christial - going high 03h : Lower Christial - going high 04h : Lower Non-recoverable - going high 05h : Lower Non-recoverable - going high 05h : Lower Non-recoverable - going high 05h : Upper Non-critical - going high 05h : Upper Non-recoverable - going high	[7:6]: 00b = unspecified type 2 01b = togger reading in type 2 10b = OEM code in type 2 11b = sensor-specific event extension code in type 2 [5:4]: 00b = unspecified type 3 01b = togger threshold value in type 3 10b = oEM code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11c = sensor-specific event extension code in type 3	Reading hat triggered the event, FFh or not present if umspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
15	Vcc 5V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	Voltage on 5v board powe supply	Threehold Values: Obh : Lower Non-critical -going low Oth : Lower Non-critical -going high Ozh : Lower Christel - going high Obh : Lower Non-critical - going low Obh : Lower Non-coverable - going high Obh : Lower Non-critical -going low Obh : Lower Non-coverable - going high Obh : Upper Non-critical -going low Obh : Upper Non-critical -going low Obh : Upper Non-critical -going low Obh : Upper Non-coverable - going low	[76]: Odo = unspecified tyte 2 01b = trigger reading in tyte 2 10b = OEM code in tyte 2 11b = sensor-specific event extension code in tyte 2 [54]: Obo = unspecified tyte 3 01b = trigger threshold value in tyte 3 10b = oEM code in tyte 3 11b = sensor-specific event extension code in tyte 3 11b = sensor-specific event extension code in tyte 3 11b = sensor-specific event extension code in tyte 3 11b = sensor-specific event extension code in tyte 3 12f = 0 offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
16	Vcc 3.3V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	Voltage on 3.3v suspend board power supply	Threehold Values: Obh : Lower Non-critical -going low Oth : Lower Non-critical -going high Ozh : Lower Critical - going now Obh : Lower Non-critical - going high Obh : Lower Non-coverable - going high Obh : Lower Non-critical -going high Obh : Lower Non-coverable - going high Obh : Upper Non-critical -going high Obh : Upper Non-critical -going high Obh : Upper Non-critical -going high Obh : Upper Non-coverable - going high	[76]: Odo = unspecified tyte 2 01b = trigger reading in tyte 2 10b = OEM code in tyte 2 11b = sensor-specific event extension code in tyte 2 [5:4]: Obo = unspecified tyte 3 01b = trigger threshold value in tyte 3 10b = code threshold value in tyte 3 11b = sensor-specific event extension code in tyte 3 11b = sensor-specific event extension code in tyte 3 11b = sensor-specific event extension code in tyte 3 11b = sensor-specific event extension code in tyte 3 11b = sensor-specific event extension code in tyte 3 12: 0] = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
17	Voc 3.3V SUS / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	Voltage on 3.3v suspend board power supply	Threahold Values: 00h : Lower Non-critical - going low 00h : Lower Non-critical - going high 00h 02h : Lower Critical - going now 00h 03h : Lower Critical - going high 00h 04h : Lower Non-critical - going high 00h 05h : Lower Critical - going high 00h 05h : Lower Non-recoverable - going high 00h 05h : Lower Non-recoverable - going high 00h 05h : Lipper Critical - going low 00h 05h : Lipper Critical - going high 00h 05h : Upper Non-recoverable - going high 00h 05h : Upper Non-recoverable - going high 00h	[7:6]: Odo = unspecified type 2 010 = trigger reading in type 2 110 = encorrest reading in type 2 1110 = sensor-specific event extension code in type 2 [5:4]: Odo = unspecified type 3 010 = trigger trenshold value in type 3 110 = sensor-specific event extension code in type 3 Bit [3:0] = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
18	Vcc 1.8V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	Voltage on 1.8v board power supply	Thread-bid Values: Oh: Lower Non-critical -going low Oh: Lower Non-critical -going high O2h: Lower Critical -going high O3h: Lower Critical -going high O4h: Lower Non-recoverable -going high O5h: Lower Non-recoverable -going high O5h: Upper Critical -going low O6h: Upper Critical -going low O6h: Upper Critical -going low O6h: Upper Non-recoverable -going low O6h: Upper Non-recoverable -going low O6h: Upper Non-recoverable -going low	[76]: Odo = unspecified type 2 Ofb = trigger mading in type 2 10b = OEM code in type 2 11b = sensor-specific event extension code in type 2 [5:4]: Odo = unspecified type 3 01b = trigger threshold value in type 3 10b = oEM code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 12f = 0 offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if umspectified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present

Sens or ID	Sensor Name / Entity (ID)	Event/Reading Type (Class and Code) / Sensor Type (Code)	Description	Offset	Data Byte 1	Data Byte 2	Data Byte 3
19	Vcc 1.5V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	Voltage on 1.5v board power supply	Threshold Values: Oth : Lower Non-critical - going low Oth : Lower Non-critical - going high Ozh : Lower Critical - going high Ozh : Lower Critical - going high Oth : Lower Non-recoverable - going high Oth : Lower Non-recoverable - going high Oth : Upper Non-critical - going high Oth : Upper Non-cretowable - going high Oth : Upper Non-recoverable - going high Oth : Upper Non-recoverable - going high Oth : Upper Non-recoverable - going high	[7:6]: Odo = umspecified type 2 Olb = toBk code in type 2 10b = toBk code in type 2 11b = sensor-specific event extension code in type 2 [5:4]: Obo = umspecified type 3 01b = toBk code in type 3 10b = code threads thread to type 3 10b = code threads thread to type 3 10b = code code threads thread to type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11c = sensor-specific event extension code in type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread to type 3 11c = sensor code threads thread	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
20	Voc 1.2V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	Voltage on 1.2v board power supply	Threehold Values: 00h : Lower Non-critical -going high 02h : Lower Christial - going high 02h : Lower Christial - going high 03h : Lower Christial - going high 04h : Lower Non-recoverable - going high 05h : Lipper Christal - going low 05h : Lipper Christal - going high 05h : Lipper Non-recoverable - going high 05h : Upper Non-recoverable - going high 05h : Upper Non-recoverable - going high 05h : Upper Non-recoverable - going high	[7:6] Obe - unspecified byte 2 01b = togen reading in byte 2 11b = serac-specifie event extension code in byte 2 [5:4] Obe - unspecified byte 3 01b = togen threshold value in byte 3 11b = serac-specifie event extension code in byte 3 11b = serac-specifie event extension code in byte 3 11b = serac-specifie event extension code in byte 3 11b = serac-specifie event extension code in byte 3 11c = serac-specifie event extension code in byte 3 12:[3:0] = Offset from Event/Reading Code for threshold event.	Reading hat triggered the event, FFh or not present if umspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
21	Voc 1.1V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	Voltage on 1.1v board power supply	Threahold Values: Ohn : Lower Non-critical -going low Ohn : Lower Non-critical -going high Ožh : Lower Critical -going high Ožh : Lower Non-recoverable - going high Ožh : Lower Non-recoverable - going high Ožh : Upper Non-critical -going high Ožh : Upper Non-critical - going high Ožh : Upper Non-recoverable - going high Ožh : Upper Non-recoverable - going high Ožh : Upper Non-recoverable - going high	[7:6] 00b = unspecified type 2 01b = toget reading in type 2 10b = oCEM code in type 2 11b = sensor-specified event extension code in type 2 [5:4] 00b = unspecified type 3 01b = toget threshold value in type 3 10b = oCEM code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 12f (3:0) = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
22	Vcc VTT / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Voltage (0x02)	Voltage on VTT	Threshold Values: Oh: Lower Non-critical -going law Oh: Lower Non-critical -going high O2h: Lower Critical - going high O4h: Lower Non-recoverable - going law O6h: Lower Non-recoverable - going law O6h: Upper Non-recoverable - going law O7h: Upper Non-critical - going high O7h: Upper Non-critical - going high O6h: Upper Non-critical - going high O6h: Upper Non-critical - going high O6h: Upper Non-critical - going high O8h: Upper Non-recoverable - going high O8h: Upper Non-recoverable - going high O8h: Upper Non-recoverable - going high	[76]: Odo = unspecified type 2 Ofb = trigger reading in type 2 10b = OEM code in type 2 11b = sensor-specifie event extension code in type 2 [5:4]: Obo = unspecified type 3 01b = trigger threshold value in type 3 10b = oEM code in type 3 10b = sensor-specifie event watersion code in type 3 11b = sensor-specifie event extension code in type 3 11b = sensor-specifie event extension code in type 3 11b = sensor-specifie event extension code in type 3 11b = sensor-specifie event extension code in type 3 11b = sensor-specifie event extension code in type 3 11b = sensor-specifie event extension code in type 3 11b = sensor-specifie event extension code in type 3	Reading that triggered the event, FPh or not present if umspectified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
23	VBat Good / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Battery (0x02)	Indicates if voltage is good from the battery and indicates if battery is OK or not.	00h (hi 0): State Desserted 01h (bit 1): State Asserted	[7:6] · Oib - unspecified byte 2 01b - previous state and/or sevenity in byte 2 10b - OEM code in byte 2 11b - sensor-specific event extension code in byte 2 [5:4] · Oib - unspecified byte 3 01b - reservation byte 3 01b - DEM code in byte 3 101 - OEM code in byte 3 301 - Offset from EventReading Code for discrete event state	-	-
24	lcc Board 5V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Current (0x03)	Board current on 5V	Threathold Values: Oth : Lower Non-critical - going low Oth : Lower Non-critical - going high Ozh : Lower Critical - going nigh Odh : Lower Non-recoverable - going low Oth : Lower Non-recoverable - going low Oth : Lower Non-recoverable - going low Oth : Upper Non-critical - going high Oth : Upper Non-recoverable - going high Oth : Upper Non-recoverable - going high	[7:6] Obe - unspecified type 2 01b - trigger reading in type 2 10b - OEM code in type 2 11b - sensor-specific event extension code in type 2 [5:4] Obe - unspecified type 3 01b - trigger threshold value in type 3 10b - oEM code in type 3 10b - oEM code in type 3 10b - betward prediction of the 3 11b - sensor-specific event extension code in type 3 11b - sensor-specific event extension code in type 3 11b - sensor-specific event extension code in type 3 11b - sensor-specific event extension code in type 3 11b - sensor-specific event extension code in type 3	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
25	loc Brd 3.3V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Current (0x03)	Board current on 3.3V	Threathold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going nigh 03h : Lower Critical - going high 03h : Lower Non-recoverable - going high 05h : Lipper Non-recoverable - going low 05h : Upper Non-recoverable - going low	[76]: 00b = unspecified type 2 01b = trigger reading in type 2 10b = OEM code in type 2 11b = sensor-specifie event extension code in type 2 [5:4]: 00b = unspecified type 3 01b = trigger threshold value in type 3 10b = code in type 3 11b = sensor-specific event extension code in type 3 11b = code - noped in twpe 3 11b = sensor-specific event extension code in type 3 11b = sensor-specific event extension code in type 3 12f [3:0] = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if umpecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
26	lcc Mez 5V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Current (0x03)	Mezzanine current on 5V	Threat-bid Values: Obh : Lower Non-critical -going low Oth : Lower Non-critical -going high Ozh : Lower Critical - going high Obh : Lower Non-critical - going high Obh : Lower Non-coverable - going high Obh : Lower Non-critical -going low Obh : Upper Critical - going low Obh : Upper Non-coverable - going low	[7:6]: Olb = unspecified type 2 Olb = bCEM code in byte 2 10b = bCEM code in byte 3 11b = sensor-specific event extension code in byte 2 [5:4]: Olb = unspecified byte 3 10b = sensor-specific event sets in byte 3 10b = code in byte 3 11b = sensor-specific event extension code in byte 3 11b = sensor-specific event extension code in byte 3 11b = sensor-specific event extension code in byte 3 12f [3:0] = Offset from Event/Reading Code for threshold event.	Reading that triggered the event, FFh or not present if umportind. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
27	Icc Mez 3.3V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Current (0x03)	Mezzanine current on 3.3V	Threahold Values: 00h : Lower Non-critical - going low 00h : Lower Non-critical - going high 00h 02h : Lower Critical - going now 00h 03h : Lower Critical - going high 00h 04h : Lower Non-critical - going high 00h 02h : Lower Critical - going high 00h 02h : Lower Non-critical - going high 00h 02h : Lower Non-critical - going high 00h 02h : Loper Non-critical - going low 00h 03h : Loper Non-critical - going high 00h 04h : Loper Non-critical - going low 00h 05h : Upper Non-recoverable - going low 00h 04h : Upper Non-recoverable - going high 00h	[7:6] 00b unspecified type 2 10b to EM code in byte 2 11b semax-specifie evide textension code in byte 2 [5:4] 00b unspecified byte 3 10b semax-specifie evide in byte 3 11b semax-specifie evide in byte 3 11b semax-specifie evide in byte 3 11b semax-specifie evide in and the semax-specifie evide in a semax-specific evide in a	Reading that triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present
28	Power SV / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Other (0x0b)	FRU 0 5v Power consumption in watts	Threat-bid Values: Obi : Lower Non-critical -going low Obi : Lower Non-critical -going high Ozi : Lower Critical - going now Obi : Lower Non-critical - going low Obi : Lower Non-coverable - going high Obi : Upper Non-clical - going low Obi : Upper Notical - going low Obi : Upper Notical - going low Obi : Upper Non-coverable - going low	(7:6): 006 = unspecified byte 2 (106 = unspecified byte 2 (106 = 05K code in byte 2 (106 = 05K code in byte 2 (116 = sensor-specific event extension code in byte 2 (5:4): 006 = unspecified byte 3 (106 = 05K code in byte 3 (106 = 05K code in byte 3 (106 = 05K code in byte 3 (107 = 05K code in by	Reading hat triggered the event, FFh or not present if unspecified. Do not confuse reading with Threshold Value	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2 must be present

Sens or ID	Sensor Name	Event/Reading Type (Class and Code)	Description	Offset	Data Byte 1	Data Byte 2	Data Byte 3
G ID	, Entry (10)	/ Sensor Type (Code)		Threshold Values: 00h : Lower Non-critical - going low	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2	Reading that triggered the event, FFh or not present if unspecified.	threshold value that triggered event, FFh or not present if unspecified. If present, Event Data 2
29	Power 3.3V / PICMG Front Board (160.96)	Threshold (Analog 0x01) / Other (0x0b)	FRU 0 3.3v Power consumption in watts	Unit : Lower Non-choice -going right Dait : Lower Critical - going right Dait : Lower Critical - going right Obt : Lower Non-recoverable - going high Obt : Upper Non-choice - going high Obt : Upper Non-chical - going high Dait : Upper Non-recoverable - going how DAit : Upper Non-recoverable - going how	tob = UEM code in pyte 2 th = sensor-peoplic event extension code in byte 2 [5:4] -006 = unspecified byte 3 th = single transhid value in byte 3 th = single transhid value in byte 3 th = sensor-peoplic event extension code in byte 3 Bit (3:0) = Offset from Event/Reading Code for threshold event.	uo not contuse reaong win i nteshoo vaue	must be present
30	Brd 5v OvCur / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Power Supply (0x03)	FRU 0 Board 5v Over Current event	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] Obe - unspecified byte 2 01b = previous state and/or sevenity in byte 2 11b = OEM code in byte 2 11b = semicons-specific event extension code in byte 2 [5:4] - Obe - unspecified byte 3 10b = OEM code in byte 3 11b = semicons-specific event extension code in byte 3 [3:0] - Offset from EventReading Code for discrete event state		-
31	Brd 3v3OvCur / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Power Supply (0x03)	FRU 0 Board 3v3 Over Current event	00h (bit 0): State Desserted 01h (bit 1): State Asserted	[7:6] - Oob = unspecified tyte 2 01b = previous state and/or sevenity in byte 2 10b = o CEM code in byte 2 11b = sense specific event statension code in byte 2 15:4] 10b = reserved 10b = reserved 10b = senserved 10b = SetM revent statension code in byte 3 10b = CEM revent statension code in byte 3 10b = CEM revent statension code in byte 3 10b = CEM revent statension code in byte 3 10b = CEM revent statension code in byte 3 10b = CEM revent statension code in byte 3		-
32	Mez 3v3OvCur / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Power Supply (0x03)	FRU 0 Mezzanine 3v3 Over Current event	00h (bit 0): State Desserted 01h (bit 1): State Asserted	[7:6] · Oob = unspecified tyte 2 01b = preiox state and/or sevenity in byte 2 11b = seriox specific event attantion code in byte 2 [5:4] · Oob = unspecified byte 3 10b = seriox code in byte 3 10b = Seriox sepecific event attantion code in byte 3 10b = Seriox sepecific event attantion code in byte 3 10b = Seriox sepecific event attantion code in byte 3 10b = Seriox sepecific code to forsere event state	-	-
33	PSU Status / Power Supply (10.97)	Generic (Discrete 0x03) / Power Supply (0x08)	Degrade Signal / Fail Signal	00h (bit 0): State Desserted 01h (bit 1): State Asserted	[7:6] - Oob = unspecified tyte 2 01b = previous state and/or sevenity in byte 2 11b = settos specific event statention code in byte 2 [5:4] Di = reserved 10b = reserved 10b = reserved 10b = settos code in byte 3 10b = settos revenite event statention code in byte 3 10b = CBK revenite event code in byte 3 10b = SBK revenite event code in code event state	-	-
34	RTM 5v PG / System Board (7.97)	Generic (Discrete 0x03) / Power Supply (0x08)	RTM 5v Power Good	00h (bit 0): State Desserted 01h (bit 1): State Asserted	[7:6] • Odb = unspecified tyte 2 01b = precisious state and/or sevenity in byte 2 10b = oEM code in byte 2 11b = sensor specific event attention code in byte 2 [5:4] © 1b = reserved 10b = reserved 10b = sensor specific event attention code in byte 3 10b = Set	-	-
35	Board Reset / PICMG From Board (160.36)	Generic (Discrete 0x03) / OEM Board Reset ((bud)	Board reset type and sources	00h (bit 0): State Deassented 01h (bit 1): State Assented	[7:6] - Obe - unspecified tyte 2 01b - previous state and/or sevenity in byte 2 10b - DEM code in byte 2 (5:4) - DEM subjective, where testension code in byte 2 (5:4) - DDs - subjective, byte 3 10b - DEM code in byte 3 11b - sensed 11b - sensor-specific event extension code in byte 3 (3:0] - Offset from Event/Reading Code for discrete event state	Reset Type: Oth (bit): Coat meat Oth (bit): Coat meat Oth (bit): Coat meat Oth (bit): Forward Coat () Warm reset revented to Cold] Oth (bit 3): Soft reset [Software jump]	Resel Source 000 (bit 0): PIMI Watchdog [cold, warm or forcad cold] (IPMI Watchdog 2 ensors gives 001 (bit 0): PIMI Watchdog 2 ensors gives 010 (bit 0): PIMI commands [cold, warm or forced cold] (chassis control, FRU control 02h (bit 2): Processor internal reset request 02h (bit 3): Processor internal reset request 04h (bit 4): Reset button [warm or forced cold] 04h (bit 3): Processor internal reset request 04h (bit 4): Reset button [warm or forced cold] 04h (bit 7): Legacy Programmable Watchdog [04h (bit 8): Software Initiated [soft, cold, warm of forced cold] 04h (bit 9): Setup Reset [Software Initiated Cold] FFn: Unknown
36	EvRcv Lost / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Cable / Interconnect (0x1b)	Event Receiver Communication Lost Indicates the state of communication with the Event Receiver (BMC or shelf manager)	00h (bit 0): State Desserted 01h (bit 1): State Asserted	7:61 ODb = unspecified type 2 01b = previous state and/or sevenity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 (5:41 - 00b = unspecified byte 3 01b = reservoir separative event extension code in byte 3 10 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 = 0 =		-
37	IPMI WD / PICMG Front Board (160.36)	Sensor-specific (Discrete Ox87) / Watchdog (0x23)	IPMI watchdog	00h thi 01: Timer expired, status only (no action, no interrupt) 01h (bit 1): Hard Reset 02h (bit 2): Power Down 02h (bit 3): Power Cycle 04h (cht 7): f0id4(7): reserved 06h (bit 6): Timer interrupt	 [7:6] - Obe - unspecified byte 2 Oth = previous state and/or sevenity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - Obe - unspecified byte 3 10b = OEM code in byte 3 10b = OEM code in the standard of the set of the se	The Event Data 2 field for this command can be used to provide an event extension code, with the following definition: bb([7:4]; interrupt type (0 - none the set of the se	-

Sens	Sensor Name	Event/Reading Type (Class and Code)	Description	Offset	Data Byte 1	Data Byte 2	Data Byte 3
or ID	/ Entity (ID)	/ Sensor Type (Code)		00h (bit 0): IPMB-A disabled, IPMB-B disabled	bit[7:4] = Ah (OEM code in Event Data 2, OEM code in Event Data 3)	bit[7:4] = Channel Number. For AdvancedTCA®, this will	bit[7] – IPMB B Override State
38	IPMB State / PICMG Front Board (160.96)	Sensor specific (Dicrotes 0x69) / PICMG IPMBD Link State (0x1)	IPMB-0/1 fault detection sensor	01h (bit 1): IPMB-A enabled, IPMB-B disabled 02h (bit 2): IPMB-A enabled, IPMP-B enabled 03h (bit 3): IPMB-A enabled, IPMP-B enabled	bit(3) — Offset 00h — IPMB-A disabled, IPMB-B disabled 01h — IPMB-A anabled, IPMB-B disabled 02h — IPMB-A anabled, IPMB-B enabled 02h — IPMB-A enabled, IPMB-B enabled 02h — IPMB-A enabled, IPMB-B enabled 10h — IPMB-A enabled, IPMB-B enabled 11h — IPMB-A enabled 11	typically be (h to indicate IPMB-0 bit[3:0] = Reserved	Db = Override state, bus isolated bb = Local Control state - IPM Controller determines state of bus. Big(A) = IPMB E Local Status methods and the state of the state of the state methods of the state of the state of the state of the state of the state of the state of the state State of the state of the state of the state State of the state of the state of the state State of the state of the state of the state State of the state of the state of the state State of the state of the state of the state State of the state of the state of the state State of the state of the state of the state State of the state of
39	IPMB1 Alert / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Platform Alert (0x24)	IPMB 1 Alert signal	oon (oli of): State Asserted	(1***) The previous state media sevenity in byte 2 The = CFM code in byte 2 The = CFM code in byte 2 (5.4). Obs – unspecified byte 3 The = reserved The = CFM code in byte 3 The = sensor-specific event extension code in byte 3 To = - Ottes through code in byte 3 To = - Ottes through code for discrete event state	-	
		Sensor-specific		00h (bit 0): No bootable media 01h (bit 1): Non-bootable diskette left in drive 02h (bit 2): PXE Server not found	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2	 [7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for 	-
40	/ PICMG Front Board (160.96)	(Discrete 0x6f) / System ACPI Power State (0x1e)	Advance Configuration and Power Interface State	U3n (bit 3): Invalid boot sector 04h (bit 4): Timeout waiting for user selection of boot source	11b = sensor-spectric event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3	previous discrete event state. (UFn if unspecified.)	
41	Health Error / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Platform Alert (0x24)	General health status, Aggregation of critical sensor	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	11b = senso-specific event extension code in byte 3 30 - Offset from Event/Reading Code for discrete event state (76) - 00b = unspecified byte 2 10b = DEM code in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 (54) - 00b = unspecified byte 3 10b = sensor-specific event extension code in byte 3 11b = sensor-specific event extension code in byte 3 10 - DEM code in byte 3 10 = sensor-specific event extension code in byte 3 10 = sensor-specific event extension code in byte 3 10 = sensor-specific event extension code in byte 3 10 = sensor-specific event extension code in byte 3		-
42	CPU 0 Status / PICMG Front Beard (160.96)	Sensor-specific (Discrete 0x61) / Processor (0x07)	CPU 0 Status	(40h bit 0): IERR 02h bit 2): FRB1/BIST failure 02h bit 2): FRB1/BIST failure 102h bit 2): Configuration Error 02h bit 3): Configuration Error 02h bit 3): Processor Presence detected 02h bit 3): Processor Pre	[76] - Obe - unspecified byte 2 01b = previous state and/or sevenity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [54] - Ob = unspecified byte 3 10b = reserved byte 3 10b = OEM code in byte 3 10b = OEM code in byte 3 (3.0) - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from Svereity Event/Reading Code. (0Fh II unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh II unspecified.)	~
43	CPU 1 Status / PICMG Front Board (160.96)	Sensor-spacific (Discrete 0x8) / Processor (0x07)	CPU 1 Status	Ghi (bii 0); IERR Oth (bii 1); Thermal Trip Oth (bii 1); FRB/NEIST failure Oth (bii 2); FRB/Neist Failure Oth (bii 4); Fracessor Startup/Initialization Oth (bii 4); Fracessor Fresence detected Oth (bii 1); Fracessor Fresence Detected Oth (bii 1	[7:6] : Obe unspecified type 2 [7:6] : Obe unspecified type 2 [10] = DCEM code in hyte 4 [10] = server, selectic event extension code in hyte 2 [5:4] : Obe unspecified type 3 [10] = server and [10] = DCEM code in hyte 3 [10] = code server detension code in hyte 3 [10] = code server detension code in hyte 3 [3:0] : Offset from Event/Reading Code for discrete event state	[7:4] - Opticnal offset from "Severity" Event/Reading Code. (0Fh fr unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	-
44	Memory / PICMG From Board (160.36)	Sensor-specific (Discrete 0x61) / Memory (0x6c)	Memory Status	(oh hi 0): Correctable ECC / other correctable memory error (2h hi ti): Uncorrectable ECC / other uncorrectable memory error (2h hi ti 2): Panity (3h hi ti 3): Memory Scrub Failed (stuck hi) (3h hi ti 3): Memory Scrub Failed (stuck hi) (3h hi ti 3): Memory Scrub Failed (stuck hi) (3h): The stuck high state of the struct (3h): The structable ECC / other correctable memory error togging limit reached (3h): The structable ECC / other correctable memory error togging limit reached (3h): The structable effect of the structable memory error togging limit reached (3h): The structable effect of the structable aphysically registration of the structable socialed with the implementation of the structable struct of the memory module is unsupported memory conclusations error that configuration is not supported because the memory module doesn't match other memory module). (3h): Spare. Indicates entity associated with the configuration is not supported because the memory module doesn't match other memory module (so the configuration is not supported because the memory module doesn't match other memory module is (3h): Spare. Indicates entity associated with the (3h): Spare. Indicates entity hassociated with the (3h): Di Di Spare. Indicates entity hassociated with the (3h): Di Spare. I	[7:6] - Oba unspecified bye 2 [7:6] - Oba unspecified bye 2 [10] = previous state and/or sevenity in byte 2 [10] = serses-specific event extension code in byte 2 [5:4] - Oba unspecified byte 3 [10] = reserve specific event extension code in byte 3 [10] = cert of the server of the	[7:4] - Optional offset from "Severity" Event/Reading Code. (0Ph II unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Ph II unspecified.)	The Event Data 3 field can be used to provide an event extension code for the 8h offset [7:3] - Memory module/device (e.g. DIMM/SIMM/SIMM) identification, relative to the entity that the sensor).

Sens	Sensor Name	Event/Reading Type	Description	Offert		Data Data 4	Date Date 2	Data Data 2
or ID	/ Entity (ID)	/ Sensor Type (Code)	Description		173.03	Data Byte 1	Data Byte 2	Data Byte 3
				00h to 07h (bit[0:7]): Post Code low byte value	[7:6]	O0b = unspecified byte 2 O1b = previous state and/or severity in byte 2	If offset 14h:	If offset 14h:
15	Post Value	Sensor-specific (Discrete 0x6f)	Show current BIOS	14n (bit 14): Post code Error		10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2	POST LOW NIDDIE	POST High Nibble
40	160.96)	/ OEM POST Value Sensor (0xc6)	generated by this sensor.	an event	[5.4]	Otb = reserved Thb = OEM code in byte 3		
					[3:0]	11b = sensor-specific event extension code in byte 3 - Offset from Event/Reading Code for discrete event state		
				00h (bit 0): System Firmware Error (POST Error) 01h (bit 1): System Firmware Hang	[7:6]	00b = unspecified byte 2 01b = previous state and/or severity in byte 2	See Sensor Specific Event (Annex B)	-
	Post Error	Sensor-specific		02h (bit 2): System Firmware Progress		10b = OEM code in byte 2 11b = Sensor-specific event extension code in byte 2		
46	/ PICMG Front Board (160.96)	(Discrete 0x6f) / System Firmwares	U-BOOT System Firmware Progress		[5:4]	- 00b = unspecified byte 3 01b = reserved		
		(UXUT)				10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3		
				00h (bit 0): Front Panel NMI / Diagnostic Interrupt	[3:0] [7:6]	Offset from Event/Reading Code for discrete event state 00b = unspecified byte 2	[7:4] - Optional offset from 'Severity' Event/Reading Code.	-
				01h (bit 0): Bus Timeout 02h (bit 0): I/O channel check NMI		01b = previous state and/or severity in byte 2 10b = OEM code in byte 2	(0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for	
				03h (bit 0): Software NMI 04h (bit 0): PCI PERR	[5:4]	11b = sensor-specific event extension code in byte 2 - 00b = unspecified byte 3	previous discrete event state. (0Fh if unspecified.)	
47	Critical Int / PICMG Front Board (Sensor-specific (Discrete 0x6f)	BIOS Critical Int	05h (bit 0): PCI SERR 06h (bit 0): EISA Fail Safe Timeout		01b = reserved 10b = OEM code in byte 3		
	160.96)	/ Critical Interrupt (0x13)		07h (bit 0): Bus Correctable Error 08h (bit 0): Bus Uncorrectable Error	[3:0]	11b = sensor-specific event extension code in byte 3 - Offset from Event/Reading Code for discrete event state		
				0Ah (bit 0): Bus Fatal Error 0Ah (bit 0): Bus Fatal Error				
				degraded performance state)				
				00h (bit 0): No bootable media 01h (bit 1): Non-bootable diskette left in drive	[7:6]	 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 	[7:4] - Optional offset from 'Severity' Event/Reading Code. (OEb if upspecified)	-
	Boot Error	Sensor-specific	BIOS memory Boot Error.	02h (bit 2): PXE Server not found 03h (bit 3): Invalid boot sector		10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2	[3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	
48	/ PICMG Front Board (160.96)	(Discrete 0x6f) / Boot Error (0x1e)	Specify if it was unable to boot from the BIOS	04h (bit 4): Timeout waiting for user selection of boot source	[5:4]	- 00b = unspecified byte 3 01b = reserved		
	-		Menory EEPROM.			10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3		
				00h (bit 0): State Deasserted	[3:0] [7:6]	Offset from Event/Reading Code for discrete event state O0b = unspecified byte 2	-	-
				U1h (bit 1): State Asserted	1	01b = previous state and/or severity in byte 2 10b = OEM code in byte 2		
49	CMOS Memory / PICMG Front Board (Generic (Discrete 0x03) / POST Memory Resize	Indicates the error with the CMOS memory		[5:4]	11b = sensor-specific event extension code in byte 2 - 00b = unspecified byte 3		
	160.96)	(0x0e)				01b = reserved 10b = OEM code in byte 3		
				ONE (hit O): Conversion Made (Frank Devel Lankaut)	[3:0]	Offset from Event/Reading Code for discrete event state Other and the state	17-41 Ontingel effect from Council & Event/Doctors Code	
				Violation attempt 01b (bit 1): Pre-boot Password Violation - user	[7.0]	Otb = unspecified byte 2 Otb = previous state and/or severity in byte 2 Itb = OEM code in byte 2	(0Fh if unspecified). (30h - Ontional offset from Event/Reading Type Code for	-
	Preboot Pswd	Sensor-specific	Indicates if an attempt was made without the right	password 02h (bit 2): Pre-boot Password Violation attempt -	[5:4]	10b = Sensor-specific event extension code in byte 2 - 00b = unspecified byte 3	previous discrete event state. (0Fh if unspecified.)	
50	/ PICMG Front Board (160.96)	(Discrete 0x6f) / Platform Security	permission to access the BIOS menu CMOS	setup password 03h (bit 3): Pre-boot Password Violation - network	10.1	01b = reserved 10b = OEM code in byte 3		
	,	(0x06)	password protected.	boot password 04h (bit 4): Other pre-boot Password Violation	[3:0]	11b = sensor-specific event extension code in byte 3 - Offset from Event/Reading Code for discrete event state		
				05h (bit 5): Out-of-band Access Password Violation				
				00h (bit 0): LAN Heartbeat Lost 01h (bit 1): LAN Heartbeat	[7:6]	 - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 	•	-
	LAN 1 Link	Sensor-specific	AN Channel 0 Link Status			10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2		
51	/ PICMG AdvancedMC Module (193.97)	(Discrete 0x6f) / LAN (0x27)	on 2.16 backplane interface		[5:4]	- 00b = unspecified byte 3 01b = reserved		
					[2.0]	10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 Offent fear Event Parties Code for disease and state		
				00h (bit 0): LAN Heartbeat Lost	[7:6]	Onset from Event/reading Code for discrete event state Ob = unspecified byte 2 Oth = unspecified state and/or councily in byte 2	-	-
	LAN 2 Link	Sensor-specific		offi (dir 1). EAN fiedribear		10b = OEM code in byte 2 11b = Sensors.specific event extension code in byte 2		
52	/ PICMG AdvancedMC Module (193.97)	(Discrete 0x6f) / LAN (0x27)	LAN Channel 1 Link Status on 2.16 backplane interface		[5:4]	00b = unspecified byte 3 01b = reserved		
		, (,				10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3		
				00h (bit 0): State Deasserted	[3:0] [7:6]	Offset from Event/Reading Code for discrete event state 00b = unspecified byte 2	-	-
			Indicates there is a	01h (bit 1): State Asserted		01b = previous state and/or severity in byte 2 10b = OEM code in byte 2		
53	Pwr Denied / PICMG Front Board (Generic (Discrete 0x03) / Platform Alert (0x24)	mistmatch between FPGA version Management		[5:4]	11b = sensor-specific event extension code in byte 2 - 00b = unspecified byte 3		
	160.96)		Controller expect and the one read.			01b = reserved 10b = OEM code in byte 3		
				Only States (00h 01h 02h 06h 09h) trigger	[3:0]	Offset from Event/Reading Code for discrete event state Offset from Event/Reading Code for discrete event state	Event Date 2 is used as hit floa array	Event Data 3 is used a hit floor error
				event 00h (bit 0) = transition to Pupping	[7.0]	01b = previous state and/or severity in byte 2 10b = 0FM code in byte 2	Bit 7: unspecifiedError Bit 6: notPresentError	Bit 7: SetClockState Not Supported Bit 6: SetClockState Error
	FRU Agent	Generic (Discrete 0x0a)	Indicates the current status	01h (bit 1) = transition to In Test 02h (bit 2) = transition to Power Off	[5:4]	11b = sensor-specific event extension code in byte 2 - 00b = unspecified byte 3	Bit 5: multirecHeaderError Bit 4: multirecDataError	Bit 5: SetPortState Not Supported Bit 4: SetPortState Error
54	/ PICMG Front Board (160.96)	/ OEM FRU Information Agent (0xc5)	of the FRU Init Agent and report failures	03h (bit 3) = transition to On Line 04h (bit 4) = transition to Off Line	'	01b = reserved 10b = OEM code in byte 3	Bit 3: timeout error Bit 2: ipmcError	Bit 3: Clock Internal Mismatch Bit 2: Clock Match Error, Not a single clock
				05h (bit 5) = transition to Off Duty 06h (bit 6) = transition to Degraded	[3:0]	11b = sensor-specific event extension code in byte 3 - Offset from Event/Reading Code for discrete event state	Bit 1: fruDataError Bit 0: commonHeaderError	matches Bit 1: Internal mismatch
				U/n (bit 7) = transition to Power Save 08h (bit 8) = Install Error	17.0	Ob upperfied by a D		Bit U: Match Error, Not in single link matches
				01h (bit 1) = transition to Running 01h (bit 1) = transition to In Test 02h (bit 2) = transition to Power Off	[7:6]	Out = unspectimed upte 2 Oth = previous state and/or severity in byte 2 Inb = OEM code in byte 2		-
55	cTCA chassis	Generic (Discrete 0x0a)	Indicates if board is inserted in a cTCA observio	03h (bit 3) = transition to On Line 04h (bit 4) = transition to Off Line	[5-41	11b = sensor-specific event extension code in byte 2 - 00b = unspecified byte 3		
	/ System Board (7.97)	/ Entity Presence (0x25)	or a legacy cPCI chassis	05h (bit 5) = transition to Off Duty 06h (bit 6) = transition to Degraded	[J4]	01b = reserved 10b = OEM code in byte 3		
				07h (bit 7) = transition to Power Save 08h (bit 8) = Install Error	[3:0]	11b = sensor-specific event extension code in byte 3 - Offset from Event/Reading Code for discrete event state		
				00h (bit 0) = transition to Running 01h (bit 1) = transition to In Test	[7:6]	- 00b = unspecified byte 2 01b = previous state and/or severity in byte 2	•	-
	PCI Procent	Generic (Discrete 0x0+)	Indicates if the backplane	02h (bit 2) = transition to Power Off 03h (bit 3) = transition to On Line	1	10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2		
56	/ System Board (7.97)	/ Entity Presence (0x25)	PICMG 2.16 might be present)	04h (bit 4) = transition to Off Line 05h (bit 5) = transition to Off Duty	[5:4]	- 00b = unspecified byte 3 01b = reserved		
				Ubn (bit 6) = transition to Degraded 07h (bit 7) = transition to Power Save	10.0-	10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 Offest for Examples for a code in byte 3		
				00h (bit 0): State Deasserted 01h (bit 1): State Accorded	[3:0] [7:6]	Onset from Event/Reading Code for discrete event state Ob = unspecified byte 2 Ob = unspecified byte ad/or provide in the 2		-
	Brd HS Fault			om (on 1). State Asserted	1	10b = OEM code in byte 2 10b = OEM code in byte 2 11b = senser-sensering average average in byte 2		
57	/ PICMG Front Board (160.96)	Generic (Discrete 0x03) / Power Supply (0x08)	Indicates on fault on the board hot swap controller.		[5:4]	Obje = unspecified byte 3 Obje = unspecified byte 3		
					1	10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3		
				00h (bit 0): State Deasserted	[3:0] [7:6]	Offset from Event/Reading Code for discrete event state Obb = unspecified byte 2	•	-
				01h (bit 1): State Asserted	1	01b = previous state and/or severity in byte 2 10b = OEM code in byte 2		
58	Mez HS Fault / PICMG Front Board (Generic (Discrete 0x03)	Indicates on fault on the		[5:4]	11b = sensor-specific event extension code in byte 2 - 00b = unspecified byte 3		
	160.96)	, i owei Suppiy (0x08)	source not swap controller.			01b = reserved 10b = OEM code in byte 3		
					[3:0]	11b = sensor-specific event extension code in byte 3 - Offset from Event/Reading Code for discrete event state		

Sens or ID	Sensor Name / Entity (ID)	Event/Reading Type (Class and Code)	Description	Offset	Data Byte 1	Data Byte 2	Data Byte 3
59	Board PwrOff / System Board (7.97)	Sensor-specific (Discrete 0x81) / Power Supply (0x25)	Indicates the state of the Board BD, SEL# line. When the main board BD, SEL# line is set to logical value 0, the sensor is asserted.	This sensor type provides a mechanism that allows a management controller to direct system management to the set of sensor based on detecting that presence of an entity. This sensor type to an topycably used for event generation. but to just the transmission of the sensor is present. This indicates that the Entity distribution of the entity d	No Event for this Sensor	No Event for this Sensor	No Event for this Sensor
60	Mez PwrOtt / System Board (7.97)	Sensor-specific (Discrete 0x60) / Power Supply (0x25)	Indicates the state of the Mezzanine BD_SEL# line. When the mezzanine BD_SEL# line is set to logical value 0, the sensor is asserted.	This sensor type provides a mechanism that allows a management controller to direct system management obsolvers to juppor a set of sensors based on detecting that presence of an entity. This sensor type is not typically used for event generation. but to just provide a present reading. The third sensor is a set of the sensor is present. The entity LD for the sensor is present. This indicates that the Entity identified by the Entity LD for the sensor is present. This indicates that the Entity identified by the Entity LD for the sensor is advance to the sensor is a sensors. Output to the entity LD for the sensor is advance to sub-out consider all sensors associated with the been disable. A deassertion of the event indicates that the Entity has been enabled.	No Event for this Sensor	No Event for this Sensor	No Event for this Sensor
61	System Slot / System Board (7.97)	Sensor-specific (Discrete 0x87) / Entity Presence (0x25)	Indicates wheter the board is inserted in a systems slot (asserted) or not (deasserted).	This server type provides a mechanism that allows a management control to direct system management control to direct system management occurs to search a metal or detecting that presence of an entity. This sensor type is not typically used for event generation - but to just provide a present rading. Oth (bit 0): Entity Present. This indicates that the Entity identified by the Entity 10 bott the sensor is also the Unit of the Entity 10 bott the sensor is also. If the entity is ablent, system management between the Entity 10 bott the Entity 10 bott the sensor is alsored. If the entity is ablent, system management botter is ablent, and there are not is alsored. The entity is ablent as well - and ignore those sensors. 202h (bit 2): Entity Disabled. The Entity is present, but has been disable. A dessertion of the event indicates that the Entity has been enabled.	No Event for this Sensor	No Event for this Sensor	No Event for this Sensor
62	IPMC Storage / PICMG From Board (160.96)	Sensor-specific (Dicores 0x8) / Management Subsystem Health (0x28)	Management subsystem health: nor volatile memory error.	Soft hit D1: sensor access degraded or unevailable (r som hat bit dograded will still return will result), but may be operating with a slower response time, or may not detect carbon possible states. As sensor that is unavailable is not able to return any results (caraning is disabled.) (D1: hot 1): controller access degraded or unavailable degraded, or access is unavailable, but the party hat degraded, or access is unavailable, the the party (The ability ta access the controller the beam degraded, or access is unavailable, the the party (D1: b1): management controller of the controller cannot be accessed for normal operation because it has been interinorizing taken of them to its non-error condition. Note that any commands that are available (controller cannot be accessed be cased of an error condition) (O1: hot 4): Smaragement controller (d1: hot hot (d1: hot 4): Smaragement (hot hot d2): management on condition) (O1: hot 4): Smaragement (hot hot d2): management on a more in the accessed be loss of a nerror condition)	[7:6] : Obs unspecified bye 2 [7:6] : Obs unspecified bye 2 [10] = DCM code in byte 2 [10] = OCM code in byte 2 [11] = sensor-specific event extension code in byte 2 [5:4] : Obs - unspecified byte 3 [10] = reserved [10] = OCM code in byte 3 [10] = OCM code in byte 3 [3:0] : Offset from Event/Reading Code for discrete event state	See Sensor Specific Event (Annex B)	See Sensor Specific Event (Annex B)
63	FW Upg Mng / PICMG Front Board (160.96)	Sensar-specific (Discrete 0x6f) / OEM FWUM Status (0xc7)	FirmWare Update Manager Status	00h (bit 0): First Boot after upgrade 01h (bit 1): First Boot after rootback	(76) 00b = unspecified byte 2 01b = previous state and/or seventy in byte 2 10b = 05EW code in byte 2 11b = b sensor-specific event extension code in byte 2 04 00b = unspecified byte 3 01b = 05EW code in byte 3 10b = 05EW code in byte 3 300 -therefore event extension code in byte 3 300 -therefore event state	-	-
64	lpmC Reboot / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Platform Alert (0x24)	IPMC reboot detection	(00h (bit 1): State Deasserted 01h (bit 1): State Asserted	[/15]-005 - unspecified type 2 016 = previous state and/or sevenity in byte 2 106 = OEM code in byte 2 108 = series specific event extension code in byte 2 (5.4) the series specific event extension code in byte 3 106 = OEM code in byte 3 101 = series -specific event extension code in byte 3 3.0 - Offset from EventReading Code for discrete event state	-	-
65	Ver change / PICMG Front Board (160.36)	Sensor-specific (Discrete 0x8) / Version Charge (0x2b)	IPMC firmware upgrade detection	(30h (bit 0): Hardware change detected with associated Erith, Vinnamioni. This offset does not imply whicher the hardware change was successful or no. Chrijh that change occurred. (31h (bit 1): Firmware or software change detected interiment implication of the software incompatibility detected with associated Erithy. (32h (bit 2): Hardware incompatibility detected with associated Erithy. (32h (bit 2): Firmware or software incompatibility detected with associated Erithy. (32h (bit 2): Erithware or software incompatibility detected with associated Erithy. (32h (bit 2): Erithware or software incompatibility detected with associated Erithy. (32h (bit 2): Erithware or Software incompatibility detected with associated Erithy was successful. (dessertion event means 'unsuccessful').	[7:6] - Obe - unspecified bye 2 019 = previous state and/or sevenity in byte 2 109 = OEM code in byte 2 119 = sensor-specific event extension code in byte 2. (5:4) - 009 - unspecified byte 3 109 = OEM code in byte 3 119 = sensor-specific event extension code in byte 3 (3:0) - Offset from Event/Reading Code for discrete event state	bill?:0]: Version change type (Ob) unspecified Oth management controller device ID (change in one or more lieds from Care Device ID) (Change index from Care Device ID) (Change index from Care Device ID) (Change index controller manufacture ID (Ob) management controller HWI version (Ob) management controller HWI version (Ob) other amagement controller HWI version (Ob) other HWI version (Ob) other HWI version (Ob) other HWI version (Ob) other HWI version (Ob) Service of depication change (Ob) nanagement software application change (Ob) management software application change (Ob) management software application change (Ob) management bardware change (a) FPGA) (The DurdrFKU module change (a) mange of a module plaged into associated entity) (A) program HWI bardware change (a) FPGA) (The DurdrFKU module change (change of a module plaged into associated entity) (A) we have a plage (A) other application change (A) management hardware change (A) FRU that is not areplanable component on the bard/FRU that is not websited as a FU)	-

Sens or ID	Sensor Name / Entity (ID)	Event/Reading Type (Class and Code) / Sensor Type (Code)	Description	Offset	Data Byte 1	Data Byte 2	Data Byte 3
66	SEL State / PICMG Front Board (160.96)	Sensor-specific (Discrete 0x6f) / Event Logging Disabled (0x10)	Indicates the current state of the SEL.	00h (bi 0): Correctable Memory Error Logging Disabled 02h (bi 1): Event 'Type' Logging Disabled 02h (bi 2): Log Area Reset/Cleared 03h (bi 3): All Event Logging Disabled 04h (bi 4): SEL Full 06h (bi 5): SCH. Almost Full 06h (bi 6): Correctable Machine Check Error Logging Disabled	[76]:00 = unspecified type 2 010 = previous state and/or sevenity in byte 2 100 = OEM code in byte 2 111 = sensor-specific event extension code in byte 2 [54]:00 = unspecified byte 3 100 = OEM code in byte 3 110 = sensor-specific event extension code in byte 3 110 - sensor-specific event extension code in byte 3 130 - Offset from EventReading Code for discrete event state	See Sensor Specific Event (Annex B)	See Sensor Specific Event (Annex B)
67	InitAgent Err / PICMG Front Board (160.96)	Generic (Discrete 0x03) / Event Logging Disabled (0xc2)	Sensor used to give the last error that occur in the RunInitAgent	00h (bi t0): State Dessented 01h (bit 1): State Assented	[76]: 00b - unspecified byte 2 01b - previous state and/or sevenity in byte 2 10b - DCM code in byte 2 11b - sensor specific event extension code in byte 2 [54]: 00b - unspecified byte 3 10b - DCM code in byte 3 10b - DCM code in byte 3 11b - sensor specific event extension code in byte 3 10b - DCM code in byte 3 11b - sensor specific event extension code in byte 3 11b - sensor specific event extension code in byte 3 (3:0) - Offset from Event/Reading Code for discrete event state	Contains OEM Init Agent error: FIN: Error Fatal SOBR Reading FEh: Error Internal SDRR Reading FEh: Error Internal SOBR Reading FDI: Error Sensor Set Event Enable Command FAh: Error Sensor Set Event Enable Command FRh: Error Sensor Set Hysteresis Command FRh: Error Sensor Set Hysteresis Command FRh: Error Sensor Set Type Enable Command FRh: Error Sensor Set T	-
68	IPMI Info-1 / PICMG Front Board (160.96)	OEM (Discrete 0x70) / OEM Firmware Info (0xc0)	Internal IPMC firmware diagnostic	00h (bit 0): EventCodeAssertTrigger 01h (bit 1): EventOverflowTrigger 02h:0Eh (bit 2:14): CodeAssertLine (binary encoded) 0Fh (bit15): IPMI Reserved	Should not generate Event. Please contact Kontron Canada Inc. Technical Support if an Event is triggered.		-
69	IPMI Info-2 / PICMG Front Board (160.96)	OEM (Discrete 0x71) / OEM Firmware Info (0xc0)	Internal IPMC firmware diagnostic	00h (bit 0): EventCodeAssertTrigger 01h (bit 1): UnusedTrigger 02:0Ah (bit 2:10): CodeAssertFileId (binary encoded) 08h:0Eh (bit 11:14): Reserved 0Fh (bit 15): IPMI Reserved	Should not generate Event. Please contact Kontron Canada Inc. Technical Support if an Event is triggered.		-

Annex B – Sensor-Specific Event

Sensor Type	Sensor Type Code	Sensor Offset	Event Data 2	Event Data 3
System Firmware Progress (formerly POST Error)	0Fh	00h	00h Unspecified. 01h No system memory is physically installed in the system. 02h No usable system memory, all installed memory has experienced an unrecoverable failure. 03h Unrecoverable hard-disk/ATAPI/IDE device failure. 04h Unrecoverable disk/ATAPI/IDE device failure. 05h Unrecoverable disk/ette subsystem failure. 06h Unrecoverable disk/ette subsystem failure. 06h Unrecoverable disk device failure. 07h Unrecoverable PS/2 or USB keyboard failure. 08h Removable boot media not found 09h Unrecoverable disc controller failure. 08h Nemovable boot media not found 09h Unrecoverable recoverable ration corruption detected 0Ch CPU voltage mismatch (processors that share same supply have mismatched voltage requirements) 09h CPU leaged methic failure.	
		01h 02b	UDI OFO Speed Inacting failure OEh to FFh reserved uses same Event Data 2 definition as following System Firmware Progress offset	
			Oth Memory initialization. 02h Hard-disk initialization. 03h Secondary processor(s) initialization 04h User authentication 05h USB resource configuration 07h PCI resource configuration 08h Voteo initialization 09h Video initialization 00h CSR concerce configuration 00h CAche initialization 00h CAche initialization 00h Che syboard controller initialization 00h Embedded controller initialization 00h Embedded controller initialization 00h Embedded controller/management controller initialization 00h Embedded controller/management controller initialization 01h Docking station attachment 05h Enabling docking station 10h Docking station ejection 11h Disabling docking station 12h Calling operating system wake-up vector 13h Statring operating system bot process, e.g. calling Int 19h 14h Baseboard or motherboard initialization 15h reserved 16h Floppy initialization 17h Keyboard test	
Event Logging Disabled	10h	00h	[7:0] - Memory module/device (e.g. DIMM/SIMM/RIMM) identification, relative to the entity that the sensor	
		01h	Event Logging is disabled for following event/reading type and offset has been disabled. Event Data 2: Event/Reading Type Code	 [7:6] - reserved. Write as 00b. [5] - 1b = logging has been disabled for all events of given type [4] - 1b = assertion event, 0b = deassertion event [3:0] - Event Offset
		02h	•	-
		04h	-	-
		05h		If Event Data 3 is not provided, then by default this event represents the SEL has reached a point of being 75% or more full. For example, if the SEL supports 215 entries, the 75% value would be 161.25 entries. Therefore, the event would be generated on the 162nd entry. Note that if this event itself is logged, it would be logged as the 163rd entry. Event Data 3: Contains hex value from 0 to 100 decimal (00h to 64h) representing the % of which the SEL is filled at the time the event was generated: 00h is 0% full (SEL is empty), 64h is 100% full, etc.
		06h	If the following field is not provided, then this event indicates that Correctable Machine Check error logging has been disabled for all Processor sensors. Event Data 2: Event Data 2 may be optionally used to return an Entity Instance or a vendor selected processor number that identifies the processor associated with this event. [7:0] - Instance ID number of the (processor) Entity that the sensor is associated with (if SDR provided for this sensor), or a vendor selected logical processor number if no SDR.	If Event Data 2 is provided then Event Data 3 may be optionally used to indicate whether Event Data 2 is being used to hold an Entity Instance number or a vendor- specific processor number. If Event Data 2 is provided by Event Data 3 is not, then Event Data 2 is assumed to hold an Entity Instance number. [7] - 0b = Entity Instance number 1b = Vendor-specific processor number [6:0] - reserved

Sensor Type	Sensor Type Code	Sensor Offset	Event Data 2	Event Data 3
Management	28h	00h	-	-
Subsystem		01h		-
Health		02h		-
		03h		-
		04h	[7:0] - Sensor Number. Number of the failed sensor corresponding to event offset 04h or 00h.	-
		05h	 [7] - logical/physical FRU device 0b = device is not a logical FRU Device 1b = device is logical FRU Device (accessed via FRU commands to mgmt. controller) [6:5] - reserved. [4:3] - LUN for Master Write-Read command or FRU Command. 00b if device is non-intelligent device directly on IPMB. [2:0] - Private bus ID if bus = Private. 000b if device directly on PMB, or device is a logical FRU Device. 	For LOGICAL FRU DEVICE (accessed via FRU commands to mgmt. controller): [7:0] - FRU Device ID within controller that generated the event.FFh = reserved. For non-intelligent FRU device: [7:1] - 7-bit I2C Slave Address of FRU device . This is relative to the bus the device is on. For devices on the IPMB, this is the slave address of the device on the IPMB. For devices on a private bus, this is the slave address of the device on the private bus. [0] - reserved.

1. To track the relationship between timestamps, the timestamp change events should be logged in pairs - the first event being logged just before the timestamp clock update followed by a second event that is logged after the timestamp clock has been updated. This enables software that reads the SEL to be able to determine time relationship between events that were logged before the update and those logged afterward. The generation of these events is normally the responsibility of the software that changes the timestamp clock. Note that some implementations may queue events prior to their being logged. It is recommended that generic software read the SEL to verify that the first event has been recorded with the relative timestamp before setting the new timestamp value and generating the second event.

Annex C – Cause of State Change Values

Cause offset	Cause of State Change Description
	Normal State Change. This is used when the FRU is proceeding normally through the state chart.
	For instance, an M3 to M4 transition is a normal state change. Other values in this table can be
	used to provide greater levels of detail about what initiated a transition. Valid for the M0 to M1, M1
0h	to M2, M2 to M3, M3 to M4, M4 to M5, M5 to M6, and M6 to M1 transitions.
	Change Commanded by Shelf Manager with Set FRU Activation. The Shelf Manager has issued a
	command to change states, typically during an insertion or extraction. Valid for the M2 to M1, M2
1h	to M3, M4 to M6, M5 to M4, and M5 to M6 transitions.
	State Change due to operator changing a Handle Switch. The FRU has changed states as a result
	of an operator changing the state of a Handle Switch. Valid for the M1 to M2, M3 to M6, M4 to M5,
2h	and M5 to M4 transitions.
	State Change due to FRU programmatic action. The FRU has changed states due to some
	non-operator related internal requirement (such as Locked bit being cleared). Valid for the M1 to
3h	M2, M3 to M6, M4 to M5, and M5 to M4 transitions
	Communication Lost or Regained. The Shelf Manager has lost or regained contact with the FRU
	and generated an event on its behalf. Valid for the M2 to M7, M3 to M7, M4 to M7, M5 to M7, and
4h	M6 to M7, M7 to M1, M7 to M2, M7 to M3, M7 to M4, M7 to M5 and M7 to M6 transitions.
	Communication Lost or Regained–locally detected. The FRU has changed state as a result of an
	internal detection by the IPM Controller. This is only valid for FRUs represented by a physically
	separate IPM Controller (e.g., mezzanine cards). Valid for the M2 to M7, M3 to M7, M4 to M7, M5
5h	to M7, M6 to M7, M7 to M1, M7 to M2, M7 to M3, M7 to M4, M7 to M5 and M7 to M6 transitions.
	Surprise State Change due to extraction. The FRU has changed state abruptly to M0 due to a
	non-compliant removal from the system. This is only valid for FRUs represented by a physically
	separate IPM Controller (e.g., mezzanine cards). Valid for the M2 to M0, M3 to M0, M4 to M0, M5
6h	to M0, M6 to M0, and M7 to M0 transitions.
	State Change due to provided information. A new state is known for the FRU that could not be
	deduced previously. This is used when a user verifies that a FRU has been extracted from the
7h	Shelf and is no longer available. Valid for the M7 to M0 state transition.
	Invalid Hardware Address Detected. This is an error condition where the Hardware Address did
8h	not pass the parity check. Valid for the M0 to M0 transition.
	Unexpected Deactivation. The FRU has transitioned to deactivating without requesting
9h	permission from the Shelf Manager first. Valid for M4 to M6 transition.
	Surprise State Change due to power failure.
	Case 1: The FRU has abruptly changed state to M0 due to a serious power failure that precludes
	further use of the FRU until it is extracted and reinserted or replaced (for example, due to
	overcurrent in the Management Power domain). This is valid for M0, M1, M2, M3, M4, M5, M6,
	and M7 to M0 transitions.
	Case 2: The FRU has cut off the power to its Payload or a managing FRU has cut off the Payload
	Power to its Managed FRU due to an unexpected power failure that does not preclude further use
	of the FRU (for example, due to overcurrent in the Payload Power domain). This is valid for M3,
Ah	M4, M5, M7 to M6, and M6, M7 to M1 transitions.
Fh	State Change, Cause Unknown. No cause could be determined.
All other values	Reserved