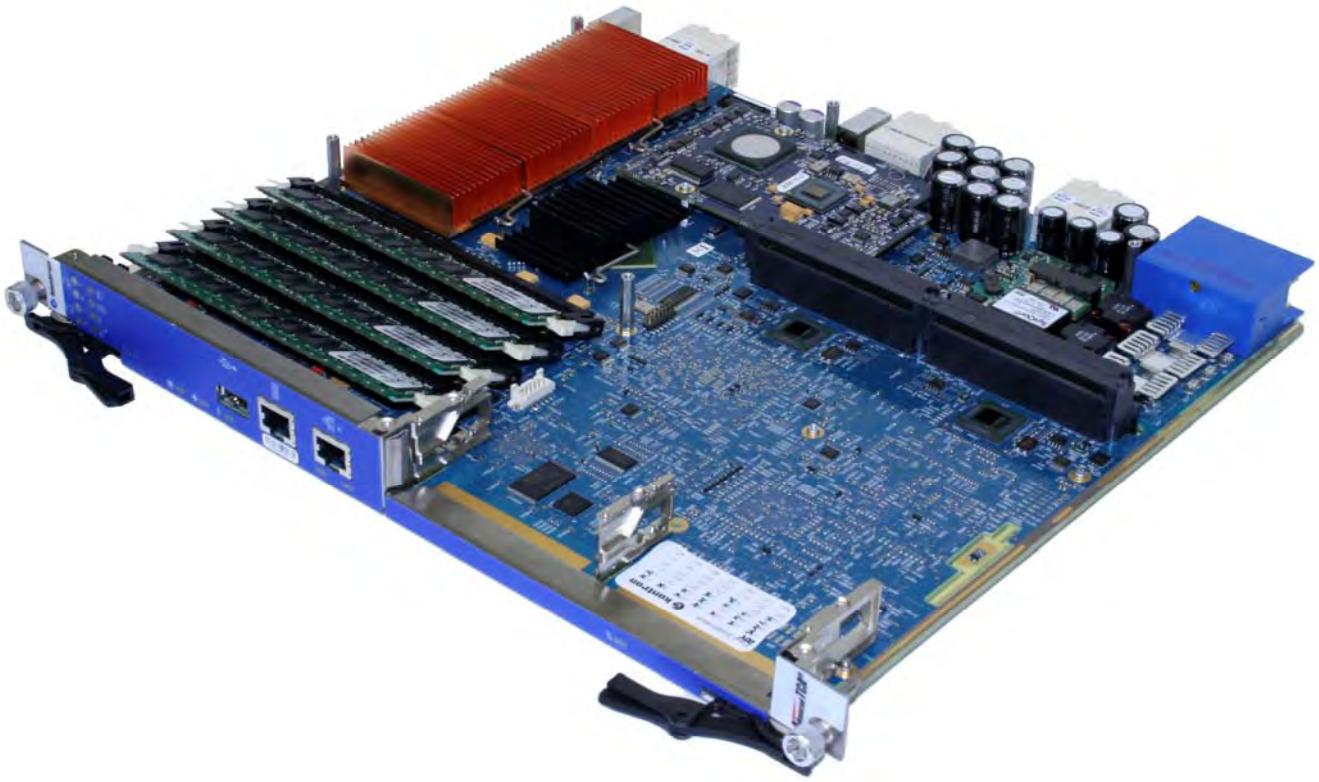
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»Kontron Application Note«



AT8020: IPMI Sensor User Guide

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Customer Service

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Scope

This document's main purpose is to show how to analyze and understand events generated by sensors of the AT8020 (and RTM8020) 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.: Which jumpers are present or 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 AT8020 and RTM8020.

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*

[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.

Table 1: *"Event/Reading Type"* Code Ranges[3]

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.

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 "OEM" defined for *OEM sensor types*.

[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.

Table 2: *"Get Sensor Reading"* Command[4]

Request Data	1	sensor number (FFh = reserved)
Response Data	1	Completion Code.
	2	Sensor reading 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. [4:0] - reserved. Ignore on read.
	(4)	For threshold-based sensors Present threshold comparison status [7:6] - reserved. Returned as 1b. Ignore on read. [5] - 1b = at or above (≥) upper non-recoverable threshold [4] - 1b = at or above (≥) upper critical threshold [3] - 1b = at or above (≥) upper non-critical threshold [2] - 1b = at or below (≤) 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) (00h Otherwise) [7] - reserved. Returned as 1b. Ignore on read. [6] - 1b = state 14 asserted [5] - 1b = state 13 asserted [4] - 1b = state 12 asserted [3] - 1b = state 11 asserted [2] - 1b = state 10 asserted [1] - 1b = state 9 asserted [0] - 1b = state 8 asserted

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 AT8020, up to 4 entities can be present:

- FRU0 PICMG Front Board (the board itself)
- FRU1 PICMG AdvancedMC Module (AMC Bay 1)
- FRU2 PICMG AdvancedMC Module (AMC Bay 2)
- FRU3 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 *FRU0* (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 0 to 98 will be fixed. Therefore, all other *ENTITY*'s (*FRU1* and up) sensors from the list should not be referred by a specific numerical ID but rather by their sensor name *(IE: "FRU1:AMC power denied...)*.

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

Figure 1: "ipmitool sensor" command

Sensor	Analog Reading	Type	Reading Byte 3&4	Threshold 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	0x0	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:USB0 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	ok	10.560	11.165	na	na	12.870	13.475
RTM:Vcc +12V	10.899	Volts	ok	0.000	10.395	na	na	14.301	16.002
RTM:Vcc BlueLED	6.612	Volts	ok	3.876	5.814	na	na	7.410	9.424
RTM:Vcc +1.2V	1.197	Volts	ok	0.000	1.121	na	na	1.285	1.588
RTM:Vcc +5V	5.079	Volts	ok	0.000	4.666	na	na	5.346	6.124
RTM:Vcc +3.3V	3.296	Volts	ok	0.000	3.072	na	na	3.536	4.032
RTM:Vcc +3.3VSUS	3.298	Volts	ok	0.000	2.941	na	na	3.672	4.335
RTM:Temp MMC	27.000	degrees C	ok	-20.000	-10.000	-5.000	60.000	70.000	80.000
RTM:Temp SASCtrl	56.000	degrees C	ok	-20.000	-10.000	-5.000	105.000	115.000	125.000
RTM:Temp Air Out	37.000	degrees C	ok	-10.000	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	60.000	70.000	80.000

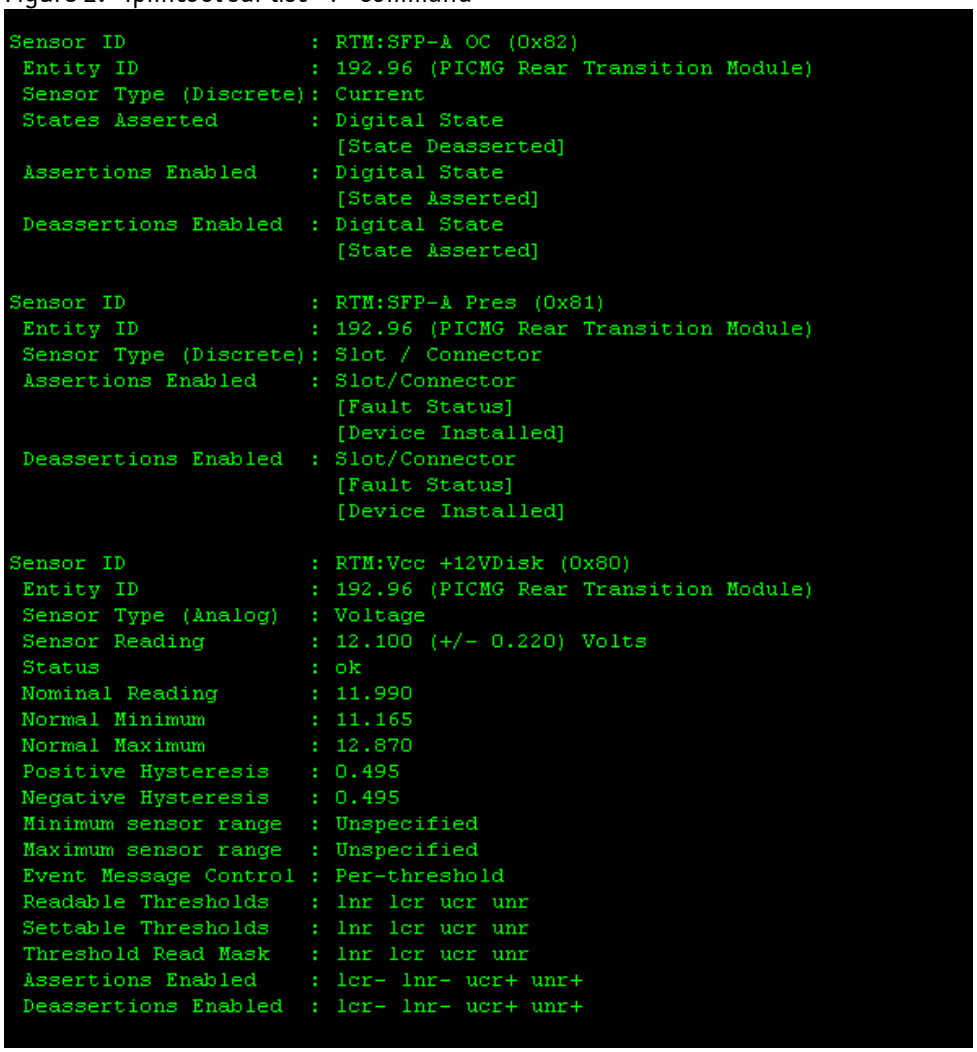
*This example was made using an AT8050

Sdr Command

The following command will provide additional information on sensors.

ipmitool sdr list –v

Figure 2: "ipmitool sdr list –v" Command



*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 | SO/GO: 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 | SO/GO: 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 | SO/GO: 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 | SO/GO: working | Asserted
149 | 11/03/2009 | 20:56:15 | IPMB-0 Status #0x53 | IPMB-A enabled, IPMB-B disabled | Asserted
14a | 11/03/2009 | 20:56:26 | IPMB-0 Status #0x53 | IPMB-A enabled, IPMP-B enabled | Asserted
```

*This example was made using an AT8050

It is recommended to use Pigeon Point's "*clia* sel" command to analyze SEL data since it provides more details on sensors.

3. Pigeon Point's *clia*

In this section, two useful commands from the Shelf Manager's "Command Line Interpreter" will be detailed.

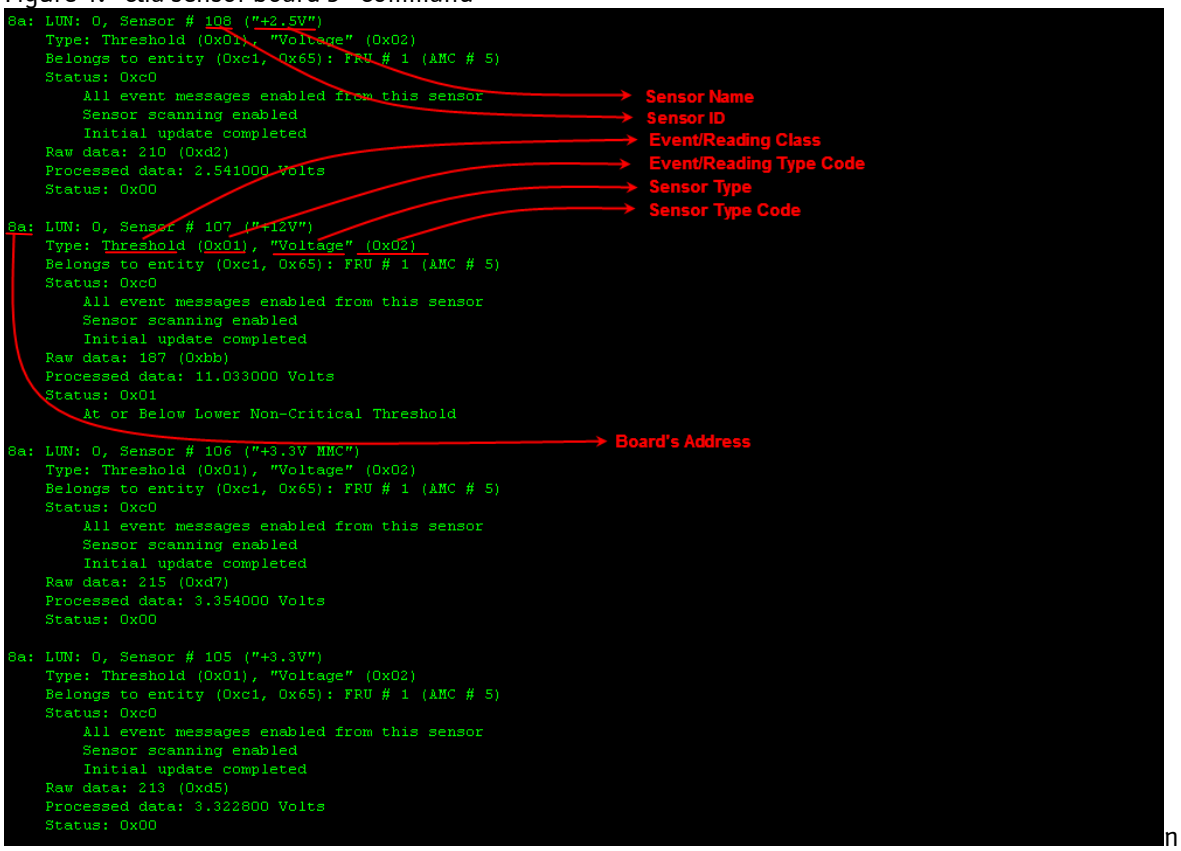
For more info consult Pigeon Point's web site: http://www.pigeonpoint.com/

Sensordata Command

This command can be used to get more details on sensors. It also indicates whether "Event Messages" are enabled or not.

clia sensor board 5 (in this example, the board is located in slot 5)

Figure 4: "clia sensor board 5" Command



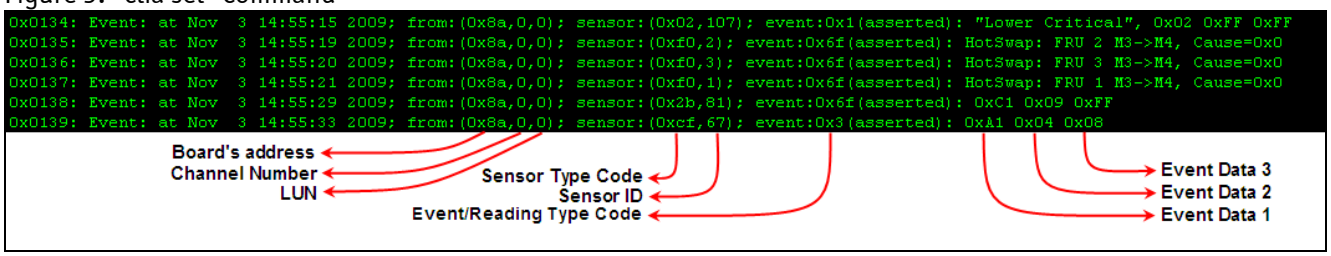
*This example was made using an AT8050

Sel Command

The "*clia* sel" command shows all the information you will need to find a definition for the event "Data Bytes" in *"Annex A"*'s list. Some Events are directly analyzed.

clia sel board 5 (in this example, the board is located in slot 5)

Figure 5: "clia sel" Command



*This example was made using an AT8050

4. Example

Examples from this section where made using an AT8050.

Analyzing the SEL

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

Figure 6: SEL Event Example

```
0x0138: Event: at Nov  3 14:55:29 2009; from:(0x8a,0,0); sensor:(0x2b,81); event:0x6f(asserted): 0xC1 0x09 0xFF
```

Since the sensor's ID (81) is between 0 and 103 (as explained section "1. Sensor Introduction"), its ID can be used to locate the sensor in the "*Annex A*" list:

Sensor 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 0x6f) / Version Change (0x2b)	00h (bit 0): Hardware change detected with associated Entity. Informational. This offset does not imply whether the hardware change was successful or not. Only that a change occurred. 01h (bit 1): Firmware or software change detected with associated Entity. Informational. Success or failure not implied. 02h (bit 2): Hardware incompatibility detected with associated Entity. 03h (bit 3): Firmware or software incompatibility detected with associated Entity. 04h (bit 4): Entity is of an invalid or unsupported hardware version. 05h (bit 5): Entity contains an invalid or unsupported firmware or software version. 06h (bit 6): Hardware Change detected with associated Entity was successful. (deassertion event means 'unsuccessful'). 07h (bit 7): Software or F/W Change detected with associated Entity was successful. (deassertion event means 'unsuccessful')	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM 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 type 00h unspecified 01h management controller device ID (change in one or more fields from 'Get Device ID') 02h management controller firmware revision 03h management controller device revision 04h management controller manufacturer ID 05h management controller IPMI version 06h management controller auxiliary firmware ID 07h management controller firmware boot block 08h other management controller firmware 09h system firmware (EFI / BIOS) change 0Ah SMBIOS change 0Bh operating system change 0Ch operating system loader change 0Dh service or diagnostic partition change 0Eh management software agent change 0Fh management software application change 10h management software middleware change 11h programmable hardware change (e.g. FPGA) 12h board/FRU module change (change of a module plugged into associated entity) 13h board/FRU component change (addition or removal of a replaceable component on the board/FRU that is not tracked as a FRU)	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

If the sensor's ID is out of the 0:98 range, use the "*clia* sensor" or "*ipmitool* sensor" command to determine the sensor's name. With this name, run a search in the "*Annex A*" list and verify that the other information match since it may occur that two sensors have the same name while they can belong to different "Entity".

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 AT8020/RTM8020 sensors

Sensor 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	FRU0 Hot Swap / PICMG Front Board (160.96)	(Discrete 0x6f) / PICMG FRU Hotswap (0xf0)	ATCA Board FRU Hot Swap Sensor for FRU 0 (Front Board)	0h (bit 0): M0 – FRU Not Installed 1h (bit 1): M1 – FRU Inactive 2h (bit 2): M2 – FRU Activation Request 3h (bit 3): M3 – FRU Activation In Progress 4h (bit 4): M4 – FRU Active 5h (bit 5): M5 – FRU Deactivation Request 6h (bit 6): M6 – FRU Deactivation In Progress 7h (bit 7): M7 – FRU Communication Lost 8h-Fh : Reserved	[7:4] = Ah (OEM code in Event Data 2, OEM code in Event Data 3) [3:0] = Current State 0h = M0 – FRU Not Installed 1h = M1 – FRU Inactive 2h = M2 – FRU Activation Request 3h = M3 – FRU Activation In Progress 4h = M4 – FRU Active 5h = M5 – FRU Deactivation Request 6h = M6 – FRU Deactivation In Progress 7h = M7 – FRU Communication Lost 8h-Fh = Reserved	bit[7:4] = Cause of state change. See, "Cause of state change values," for values. (Annex C) bit[3:0] = Previous State 0h = M0 – FRU Not Installed 1h = M1 – FRU Inactive 2h = M2 – FRU Activation Request 3h = M3 – FRU Activation In Progress 4h = M4 – FRU Active 5h = M5 – FRU Deactivation Request 6h = M6 – FRU Deactivation In Progress 7h = M7 – FRU Comminication Lost 8h -Fh = Reserved	bit[7:0] = FRU Device ID
1	FRU1 Hot Swap / PICMG AdvancedMC Module (193.101)	(Discrete 0x6f) / PICMG FRU Hotswap (0xf0)	ATCA Board FRU Hot Swap Sensor for FRU 2 (AMC Bay 1)	0h (bit 0): M0 – FRU Not Installed 1h (bit 1): M1 – FRU Inactive 2h (bit 2): M2 – FRU Activation Request 3h (bit 3): M3 – FRU Activation In Progress 4h (bit 4): M4 – FRU Active 5h (bit 5): M5 – FRU Deactivation Request 6h (bit 6): M6 – FRU Deactivation In Progress 7h (bit 7): M7 – FRU Communication Lost 8h-Fh : Reserved	[7:4] = Ah (OEM code in Event Data 2, OEM code in Event Data 3) [3:0] = Current State 0h = M0 – FRU Not Installed 1h = M1 – FRU Inactive 2h = M2 – FRU Activation Request 3h = M3 – FRU Activation In Progress 4h = M4 – FRU Active 5h = M5 – FRU Deactivation Request 6h = M6 – FRU Deactivation In Progress 7h = M7 – FRU Communication Lost 8h-Fh = Reserved	bit[7:4] = Cause of state change. See, "Cause of state change values," for values. (Annex C) bit[3:0] = Previous State 0h = M0 – FRU Not Installed 1h = M1 – FRU Inactive 2h = M2 – FRU Activation Request 3h = M3 – FRU Activation In Progress 4h = M4 – FRU Active 5h = M5 – FRU Deactivation Request 6h = M6 – FRU Deactivation In Progress 7h = M7 – FRU Comminication Lost 8h -Fh = Reserved	bit[7:0] = FRU Device ID
2	FRU2 Hot Swap / PICMG AdvancedMC Module (193.102)	(Discrete 0x6f) / PICMG FRU Hotswap (0xf0)	ATCA Board FRU Hot Swap Sensor for FRU 3 (AMC Bay 2)	0h (bit 0): M0 – FRU Not Installed 1h (bit 1): M1 – FRU Inactive 2h (bit 2): M2 – FRU Activation Request 3h (bit 3): M3 – FRU Activation In Progress 4h (bit 4): M4 – FRU Active 5h (bit 5): M5 – FRU Deactivation Request 6h (bit 6): M6 – FRU Deactivation In Progress 7h (bit 7): M7 – FRU Communication Lost 8h-Fh : Reserved	[7:4] = Ah (OEM code in Event Data 2, OEM code in Event Data 3) [3:0] = Current State 0h = M0 – FRU Not Installed 1h = M1 – FRU Inactive 2h = M2 – FRU Activation Request 3h = M3 – FRU Activation In Progress 4h = M4 – FRU Active 5h = M5 – FRU Deactivation Request 6h = M6 – FRU Deactivation In Progress 7h = M7 – FRU Communication Lost 8h-Fh = Reserved	bit[7:4] = Cause of state change. See, "Cause of state change values," for values. (Annex C) bit[3:0] = Previous State 0h = M0 – FRU Not Installed 1h = M1 – FRU Inactive 2h = M2 – FRU Activation Request 3h = M3 – FRU Activation In Progress 4h = M4 – FRU Active 5h = M5 – FRU Deactivation Request 6h = M6 – FRU Deactivation In Progress 7h = M7 – FRU Comminication Lost 8h -Fh = Reserved	bit[7:0] = FRU Device ID
3	FRU3 Hot Swap / PICMG Rear Transition Module (192.96)	(Discrete 0x6f) / PICMG FRU Hotswap (0xf0)	ATCA Board FRU Hot Swap Sensor for FRU 3 (RTM)	0h (bit 0): M0 – FRU Not Installed 1h (bit 1): M1 – FRU Inactive 2h (bit 2): M2 – FRU Activation Request 3h (bit 3): M3 – FRU Activation In Progress 4h (bit 4): M4 – FRU Active 5h (bit 5): M5 – FRU Deactivation Request 6h (bit 6): M6 – FRU Deactivation In Progress 7h (bit 7): M7 – FRU Communication Lost 8h-Fh : Reserved	[7:4] = Ah (OEM code in Event Data 2, OEM code in Event Data 3) [3:0] = Current State 0h = M0 – FRU Not Installed 1h = M1 – FRU Inactive 2h = M2 – FRU Activation Request 3h = M3 – FRU Activation In Progress 4h = M4 – FRU Active 5h = M5 – FRU Deactivation Request 6h = M6 – FRU Deactivation In Progress 7h = M7 – FRU Communication Lost 8h-Fh = Reserved	bit[7:4] = Cause of state change. See, "Cause of state change values," for values. (Annex C) bit[3:0] = Previous State 0h = M0 – FRU Not Installed 1h = M1 – FRU Inactive 2h = M2 – FRU Activation Request 3h = M3 – FRU Activation In Progress 4h = M4 – FRU Active 5h = M5 – FRU Deactivation Request 6h = M6 – FRU Deactivation In Progress 7h = M7 – FRU Comminication Lost 8h -Fh = Reserved	bit[7:0] = FRU Device ID
4	FRU0 Reconfig / PICMG Front Board (160.96)	(Discrete 0x6f) / System Event (0x12)	Sensor Population Change on Carrier	00h (bit 0):System Reconfigured 01h (bit 1):OEM System Boot Event 02h (bit 2):Undetermined system hardware failure 03h (bit 3):Entry added to Auxiliary Log 04h (bit 4):PEF Action 05h (bit 5):Timestamp Clock Synch.	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	See Sensor Specific Event (Annex B)	FFh
5	Temp Air Inlet / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	Ait Inlet Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
6	Temp CPU 0 Vcore / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	CPU0 Vcore Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
7	Temp CPU 0 / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	CPU0 Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
8	Temp CPU 1 / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	CPU1 Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
9	Temp DIMMA Inlet / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	DIMMA Inlet Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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

Sensor 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 DIMMB Inlet / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	DIMMB Inlet Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
11	Temp DIMM Outlet / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	DIMM outlet Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
12	Temp MCH / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	MCH Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
13	Temp MCH Inlet / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	MCH intlet Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
14	Temp LAN BIntf / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	Base Interface Ethernet Controller Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
15	Temp LAN FIntf / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	Fabric Interface Ethernet Controller Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
16	Temp Mez Area / PICMG Front Board (160.96)	(Threshold 0x01) / Temperature (0x01)	Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
17	Power Good / PICMG Front Board (160.96)	(Discrete 0x77) / Power Supply (0x08)	Actual power good status	Bit 0: VccGood 12V Bit 1: VccGood 5V Bit 2: VccGood 3.3V Bit 3: VccGood 2.5V Bit 4: VccGood 1.8V Bit 5: VccGood 1.5V Bit 6: VccGood 1.2V Bit 7: VccGood Core Bit 8: VccGood -5V Bit 9: VccGood 1.1V Bit 10: VccGood 1.05V Bit 11: VccGood 1.25V	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
18	Power Good Event / PICMG Front Board (160.96)	(Discrete 0x77) / Power Supply (0x08)	Power good status event that occur since the last power on or reset.	Bit 0: VccGood 12V Bit 1: VccGood 5V Bit 2: VccGood 3.3V Bit 3: VccGood 2.5V Bit 4: VccGood 1.8V Bit 5: VccGood 1.5V Bit 6: VccGood 1.2V Bit 7: VccGood Core Bit 8: VccGood -5V Bit 9: VccGood 1.1V Bit 10: VccGood 1.05V Bit 11: VccGood 1.25V	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
19	VCORE 0 / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	CPU 0 Core Voltage	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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

Sensor 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
20	VCORE 1 / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	CPU 1 Core Voltage	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
21	UNUSED	-	#N/A	-	-	-	-
22	Vcc -48V / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on -48v board input power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
23	Vcc +12V / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 12v board power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
24	Vcc +5V / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 5V payload power supply (Volts)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
25	Vcc +5V SUS / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 5v suspend (management) board power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
26	Vcc +3.3V / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 3.3V payload power supply (Volts)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
27	Vcc +3.3V SUS / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 3.3V suspend (management) power supply (Volts)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
28	Vcc +2.5V / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 2.5v board power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
29	Vcc Ref +2.5V / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 2.5v board power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
30	Vcc +2.5V SUS / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 2.5v suspend (management) board power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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

Sensor 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
31	Vcc +1.8V / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 1.8v suspend (management) board power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
32	Vcc +1.5V / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 1.5V payload power supply (Volts)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
33	Vcc +1.5V SUS / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 1.5v suspend (management) board power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
34	Vcc +1.2V SUS / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 1.2V suspend (management) power supply (Volts)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
35	Vcc +1.1V SUS / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 1.2v board power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
36	Vcc VTT DDR / PICMG Front Board (160.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on the memory (1.05)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
37	-48V A Pres-Fuse / PICMG Front Board (160.96)	(Discrete 0x6f) / Power Supply (0x08)	Fuse presence and fault detection -48 V on supply A	00h (bit 0): Presence detected 01h (bit 1): Power Supply Failure detected 02h (bit 2): Predictive Failure 03h (bit 3): Power Supply input lost 04h (bit 4): Power Supply input lost or out-of-range 05h (bit 5): Power Supply input out-of-range, but present 06h (bit 6): Configuration error.	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	The Event Data 3 field provides a more detailed definition of the error (offset 6h) 7:4 = Reserved for future definition, set to 0000b 3:0 = Error Type, one of 0h = Vendor mismatch, for power supplies that include this status. (Typically, the system OEM defines the vendor compatibility criteria that drives this status). 1h = Revision mismatch, for power supplies that include this status. (Typically, the system OEM defines the vendor revision compatibility that drives this status). 2h = Processor missing. For processor power supplies (typically DC-to-DC converters or VRMs), there's usually a one-to-one relationship between the supply and the CPU. This offset can indicate the situation where the power supply is present but the processor is not. This offset can be used for reporting that as an unexpected or unsupported condition. 3h = Power Supply rating mismatch. The power rating of the supply does not match the system's requirements. 4h = Voltage rating mismatch. The voltage rating of the supply does not match the system's requirements.
38	-48V B Pres-Fuse / PICMG Front Board (160.96)	(Discrete 0x6f) / Power Supply (0x08)	Fuse presence and fault detection -48 V on supply B	00h (bit 0): Presence detected 01h (bit 1): Power Supply Failure detected 02h (bit 2): Predictive Failure 03h (bit 3): Power Supply input lost 04h (bit 4): Power Supply input lost or out-of-range 05h (bit 5): Power Supply input out-of-range, but present 06h (bit 6): Configuration error.	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	The Event Data 3 field provides a more detailed definition of the error (offset 6h) 7:4 = Reserved for future definition, set to 0000b 3:0 = Error Type, one of 0h = Vendor mismatch, for power supplies that include this status. (Typically, the system OEM defines the vendor compatibility criteria that drives this status). 1h = Revision mismatch, for power supplies that include this status. (Typically, the system OEM defines the vendor revision compatibility that drives this status). 2h = Processor missing. For processor power supplies (typically DC-to-DC converters or VRMs), there's usually a one-to-one relationship between the supply and the CPU. This offset can indicate the situation where the power supply is present but the processor is not. This offset can be used for reporting that as an unexpected or unsupported condition. 3h = Power Supply rating mismatch. The power rating of the supply does not match the system's requirements. 4h = Voltage rating mismatch. The voltage rating of the supply does not match the system's requirements.

Sensor 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
39	FRU0 Power / PICMG Front Board (160.96)	(Threshold 0x01) / Other (0x0b)	FRU 0 Power consumption in watts	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
40	FRU1 Power / PICMG Front Board (160.96)	(Threshold 0x01) / Other (0x0b)	FRU 1 Power consumption in watts	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
41	FRU2 Power / PICMG Front Board (160.96)	(Threshold 0x01) / Other (0x0b)	FRU 2 Power consumption in watts	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
42	FRU3 Power / PICMG Front Board (160.96)	(Threshold 0x01) / Other (0x0b)	FRU 3 Power consumption in watts	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
43	Board Reset / PICMG Front Board (160.96)	(Discrete 0x6f) / OEM Board Reset (0xc4)	Board reset type and sources	00h (bit 0): Push Button 01h (bit 1): HWPower: Power error 02h (bit 2): Unknown: Unknown PCI reset 03h (bit 3): HwWatchDog: Hardware watchdog / IpmC Watchdog 04h (bit 4): SoftReset: Soft reset 05h (bit 5): WarmReset: Warm Reset 06h (bit 6): ColdReset: Software generated cold reset 07h (bit 7): IpmiCommand: Reset trigged by IpmiCommand chassis command fru control 08h (bit 8): Setup Reset: Cmos Setup generated reset 09h (bit 9): PowerUpReset: Reset generated on power up 0A-0Dh (bit 10-13): reserved 0Eh (bit 14): Shadow Reset	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
44	EventRcv ComLost / PICMG Front Board (160.96)	(Discrete 0x03) / Cable / Interconnect (0x1b)	Detects communication with the event receiver (ShMc) has been lost	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
45	IPMI Watchdog / PICMG Front Board (160.96)	(Discrete 0x6f) / Watchdog (0x23)	IPMI Watchdog (payload watchdog)	00h (bit 0): Timer expired, status only (no action, no interrupt) 01h (bit 1): Hard Reset 02h (bit 2): Power Down 03h (bit 3): Power Cycle 04h-07h (bit[4:7]): reserved 08h (bit 8): Timer interrupt	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	The Event Data 2 field for this command can be used to provide an event extension code, with the following definition: bit[7:4]: interrupt type 0h = none 1h = SMI 2h = NMI 3h = Messaging Interrupt Fh = unspecified all other = reserved bit[3:0]: timer use at expiration: 0h = reserved 1h = BIOS FRB2 2h = BIOS/POST 3h = OS Load 4h = SMS/OS 5h = OEM Fh = unspecified all other = reserved	FFh
46	IPMB0 Link State / PICMG Front Board (160.96)	(Discrete 0x6f) / PICMG IPMB0 Link State (0xf1)	IPMB-0 fault detection sensor	00h (bit 0): IPMB-A disabled, IPMB-B disabled 01h (bit 1): IPMB-A enabled, IPMB-B disabled 02h (bit 2): IPMB-A disabled, IPMB-B enabled 03h (bit 3): IPMB-A enabled, IPMP-B enabled	bit[7:4] = Ah (OEM code in Event Data 2, OEM code in Event Data 3 bit[3:0] = Offset 00h – IPMB-A disabled, IPMB-B disabled 01h – IPMB-A enabled, IPMB-B disabled 02h – IPMB-A disabled, IPMB-B enabled 03h – IPMB-A enabled, IPMP-B enabled	bit[7:4] = Channel Number. For AdvancedTCA®, this will typically be 0h to indicate IPMB-0 bit[3:0] = Reserved	bit[7] – IPMB B Override State 0b = Override state, bus isolated 1b = Local Control state – IPM Controller determines state of bus. bit[6:4] = IPMB B Local Status 0h = No Failure. Bus enabled if no override in effect. 1h = Unable to drive clock HI 2h = Unable to drive data HI 3h = Unable to drive clock LO 4h = Unable to drive data LO 5h = Clock low timeout 6h = Under test (the IPM Controller is attempting to determine if it is causing a bus hang) 7h = Undiagnosed Communications Failure bit[3] – IPMB A Override Status 0b = Override status, bus isolated 1b = Local Control state – IPM Controller determines state of bus. bit[2:0] = IPMB A Local Status 0h = No Failure. Bus enabled if no override in effect. 1h = Unable to drive clock HI 2h = Unable to drive data HI 3h = Unable to drive clock LO 4h = Unable to drive data LO 5h = Clock low timeout 6h = Under test (the IPM Controller is attempting to determine if it is causing a bus hang) 7h = Undiagnosed Communications Failure

Sensor 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
47	FRU0 IPMBL State / PICMG Front Board (160.96)	(Discrete 0x6f) / OEM IPMBL Link State (0xc3)	IPMB-L branch from FRU0 fault detection sensor	02h (bit 2): IPMB-L Disable 03h (bit 3): IPMB-L Enable	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Always 0	Bit[7:3]: Always 0 Bit[2:0]: 0h = No failure 1h = Unable to drive clock HI 2h = Unable to drive data HI 3h = Unable to drive clock LO 4h = Unable to drive data LO 5h = clock low timeout 6h = Under test (the IPM Controller is attempting to determine who is causing a bus hang) 7h = Undiagnosed Communication Failure
48	FRU1 IPMBL State / PICMG Front Board (160.96)	(Discrete 0x6f) / OEM IPMBL Link State (0xc3)	IPMB-L branch from FRU1 fault detection sensor	02h (bit 2): IPMB-L Disable 03h (bit 3): IPMB-L Enable	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Always 0	Bit[7:3]: Always 0 Bit[2:0]: 0h = No failure 1h = Unable to drive clock HI 2h = Unable to drive data HI 3h = Unable to drive clock LO 4h = Unable to drive data LO 5h = clock low timeout 6h = Under test (the IPM Controller is attempting to determine who is causing a bus hang) 7h = Undiagnosed Communication Failure
49	FRU2 IPMBL State / PICMG Front Board (160.96)	(Discrete 0x6f) / OEM IPMBL Link State (0xc3)	IPMB-L branch from FRU2 fault detection sensor	02h (bit 2): IPMB-L Disable 03h (bit 3): IPMB-L Enable	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Always 0	Bit[7:3]: Always 0 Bit[2:0]: 0h = No failure 1h = Unable to drive clock HI 2h = Unable to drive data HI 3h = Unable to drive clock LO 4h = Unable to drive data LO 5h = clock low timeout 6h = Under test (the IPM Controller is attempting to determine who is causing a bus hang) 7h = Undiagnosed Communication Failure
50	FRU3 IPMBL State / PICMG Front Board (160.96)	(Discrete 0x6f) / OEM IPMBL Link State (0xc3)	#N/A	02h (bit 2): IPMB-L Disable 03h (bit 3): IPMB-L Enable	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Always 0	Bit[7:3]: Always 0 Bit[2:0]: 0h = No failure 1h = Unable to drive clock HI 2h = Unable to drive data HI 3h = Unable to drive clock LO 4h = Unable to drive data LO 5h = clock low timeout 6h = Under test (the IPM Controller is attempting to determine who is causing a bus hang) 7h = Undiagnosed Communication Failure
51	ACPI State / PICMG Front Board (160.96)	(Discrete 0x6f) / System ACPI Power State (0x22)	Advance Configuration and Power Interface State	00h (bit 0): S0 / G0 "working" 01h (bit 1): S1 "sleeping with system h/w & processor context maintained" 02h (bit 2): S2 "sleeping, processor context lost" 03h (bit 3): S3 "sleeping, processor & h/w context lost, memory retained." 04h (bit 4): S4 "non-volatile sleep / suspend-to disk" 05h (bit 5): S5 / G2 "soft-off" 06h (bit 6): S4 / S5 soft-off, particular S4 / S5 state cannot be determined 07h (bit 7): G3 / Mechanical Off 08h (bit 8): Sleeping in an S1, S2, or S3 states (used when particular S1, S2, S3 state cannot be determined) 09h (bit 9): G1 sleeping (S1-S4 state cannot be determined) 0Ah (bit 10): S5 entered by override 0Bh (bit 11): Legacy ON state 0Ch (bit 12): Legacy OFF state 0Eh (bit 13): Unknown	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
52	Health Error / PICMG Front Board (160.96)	(Discrete 0x03) / Platform Alert (0x24)	General health status, Aggregation of critical sensor. This list is flexible and could be adjust based on customer requirements.	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
53	CPU 0 Status / PICMG Front Board (160.96)	(Discrete 0x6f) / Processor (0x07)	CPU 0 Status	00h (bit 0): IERR 01h (bit 1): Thermal Trip 02h (bit 2): FRB1/BIST failure 03h (bit 3): FRB2/Hang in POST failure (used hang is believed to be due or related to a processor failure. Use System Firmware Progress sensor for other BIOS hangs.) 04h (bit 4): FRB3/Processor Startup/Initialization failure (CPU didn't start) 05h (bit 5): Configuration Error 06h (bit 6): SM BIOS 'Uncorrectable CPU-complex Error' 07h (bit 7): Processor Presence detected 08h (bit 8): Processor disabled 09h (bit 9): Terminator Presence Detected 0Ah (bit 10): Processor Automatically Throttled (processor throttling triggered by a hardware-based mechanism operating independent from system software, such as automatic thermal throttling or throttling to limit power consumption.) 0Bh (bit 11): Machine Check Exception (Uncorrectable) 0Ch (bit 12): Correctable Machine Check Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
54	CPU 0 ThermTrip / PICMG Front Board (160.96)	(Discrete 0x6f) / Processor (0x07)	CPU 0 ThermTrip	00h (bit 0): IERR 01h (bit 1): Thermal Trip 02h (bit 2): FRB1/BIST failure 03h (bit 3): FRB2/Hang in POST failure (used hang is believed to be due or related to a processor failure. Use System Firmware Progress sensor for other BIOS hangs.) 04h (bit 4): FRB3/Processor Startup/Initialization failure (CPU didn't start) 05h (bit 5): Configuration Error 06h (bit 6): SM BIOS 'Uncorrectable CPU-complex Error' 07h (bit 7): Processor Presence detected 08h (bit 8): Processor disabled 09h (bit 9): Terminator Presence Detected 0Ah (bit 10): Processor Automatically Throttled (processor throttling triggered by a hardware-based mechanism operating independent from system software, such as automatic thermal throttling or throttling to limit power consumption.) 0Bh (bit 11): Machine Check Exception (Uncorrectable) 0Ch (bit 12): Correctable Machine Check Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh

Sensor 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
55	CPU 1 Status / PICMG Front Board (160.96)	(Discrete 0x6f) / Processor (0x07)	CPU 1 Status	00h (bit 0): IERR 01h (bit 1): Thermal Trip 02h (bit 2): FRB1/BIST failure 03h (bit 3): FRB2/Hang in POST failure (used hang is believed to be due or related to a processor failure. Use System Firmware Progress sensor for other BIOS hangs.) 04h (bit 4): FRB3/Processor Startup/Initialization failure (CPU didn't start) 05h (bit 5): Configuration Error 06h (bit 6): SM BIOS 'Uncorrectable CPU-complex Error' 07h (bit 7): Processor Presence detected 08h (bit 8): Processor disabled 09h (bit 9): Terminator Presence Detected 0Ah (bit 10): Processor Automatically Throttled (processor throttling triggered by a hardware-based mechanism operating independent from system software, such as automatic thermal throttling or throttling to limit power consumption.) 0Bh (bit 11): Machine Check Exception (Uncorrectable) 0Ch (bit 12): Correctable Machine Check Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
56	CPU 1 ThermTrip / PICMG Front Board (160.96)	(Discrete 0x6f) / Processor (0x07)	CPU 1 ThermTrip	00h (bit 0): IERR 01h (bit 1): Thermal Trip 02h (bit 2): FRB1/BIST failure 03h (bit 3): FRB2/Hang in POST failure (used hang is believed to be due or related to a processor failure. Use System Firmware Progress sensor for other BIOS hangs.) 04h (bit 4): FRB3/Processor Startup/Initialization failure (CPU didn't start) 05h (bit 5): Configuration Error 06h (bit 6): SM BIOS 'Uncorrectable CPU-complex Error' 07h (bit 7): Processor Presence detected 08h (bit 8): Processor disabled 09h (bit 9): Terminator Presence Detected 0Ah (bit 10): Processor Automatically Throttled (processor throttling triggered by a hardware-based mechanism operating independent from system software, such as automatic thermal throttling or throttling to limit power consumption.) 0Bh (bit 11): Machine Check Exception (Uncorrectable) 0Ch (bit 12): Correctable Machine Check Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
57	Memory / PICMG Front Board (160.96)	(Discrete 0x6f) / Memory (0x0c)	Memory Status	00h (bit 0): Correctable ECC / other correctable memory error 01h (bit 1): Uncorrectable ECC / other uncorrectable memory error 02h (bit 2): Parity 03h (bit 3): Memory Scrub Failed (stuck bit) 04h (bit 4): Memory Device Disabled 05h (bit 5): Correctable ECC / other correctable memory error logging limit reached 06h (bit 6): Presence detected. Indicates presence of entity associated with the sensor. Typically the entity will be a 'memory module' or other entity representing a physically replaceable unit of memory. 07h (bit 7): Configuration error. Indicates a memory configuration error for the entity associated with the sensor. This can include when a given implementation of the entity is not supported by the system (e.g., when the particular size of the memory module is unsupported) or that the entity is part of an unsupported memory configuration (e.g. the configuration is not supported because the memory module doesn't match other memory modules). 08h (bit 8): Spare. Indicates entity associated with the sensor represents a 'spare' unit of memory. 09h (bit 9): Memory Automatically Throttled. (memory 0Ah (bit 10): Critical Overtemperature. Memory devic	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	The Event Data 3 field can be used to provide an event extension code for the 8h offset [7:0] - Memory module/device (e.g. DIMM/SIMM/RIMM) identification, relative to the entity that the sensor is associated with (if SDR provided for this sensor).
58	POST Value / PICMG Front Board (160.96)	(Discrete 0x6f) / OEM POST Value Sensor (0xc6)	Current POST Code Generates an event with current post CODE	Current POST Code	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Current POST Code	Current POST Code
59	POST Error / PICMG Front Board (160.96)	(Discrete 0x6f) / System Firmwares (0x0f)	System Firmware Progress	00h (bit 0): System Firmware Error (POST Error) 01h (bit 1): System Firmware Hang 02h (bit 2): System Firmware Progress	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	See Sensor Specific Event (Annex B)	FFh
60	Critical Int / PICMG Front Board (160.96)	(Discrete 0x6f) / Critical Interrupt (0x13)	Critical Interrupt	00h (bit 0): Front Panel NMI / Diagnostic Interrup 01h (bit 0): Bus Timeout 02h (bit 0): I/O channel check NMI 03h (bit 0): Software NMI 04h (bit 0): PCI PERR 05h (bit 0): PCI SERR 06h (bit 0): EISA Fail Safe Timeout 07h (bit 0): Bus Correctable Error 08h (bit 0): Bus Uncorrectable Error 09h (bit 0): Fatal NMI (port 61h, bit 7) 0Ah (bit 0): Bus Fatal Error 0Bh (bit 0): Bus Degraded (bus operating in a degraded performance state)	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
61	Boot Error / PICMG Front Board (160.96)	(Discrete 0x6f) / Boot Error (0x1e)	Boot Error	00h (bit 0): No bootable media 01h (bit 1): Non-bootable diskette left in drive 02h (bit 2): PXE Server not found 03h (bit 3): Invalid boot sector 04h (bit 4): Timeout waiting for user selection of boot source	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
62	CmosMemorySize / PICMG Front Board (160.96)	(Discrete 0x03) / POST Memory Resize (0x0e)	POST Memory Resize	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh

Sensor 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
63	Preboot Password / PICMG Front Board (160.96)	(Discrete 0x6f) / Platform Security (0x06)	Platform Security Violation Attempt	00h (bit 0): Secure Mode (Front Panel Lockout) Violation attempt 01h (bit 1): Pre-boot Password Violation - user password 02h (bit 2): Pre-boot Password Violation attempt - setup password 03h (bit 3): Pre-boot Password Violation - network boot password 04h (bit 4): Other pre-boot Password Violation 05h (bit 5): Out-of-band Access Password Violation	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
64	FWH 0 Boot Error / PICMG Front Board (160.96)	(Discrete 0x6f) / Boot Error (0x1e)	Firmware Hub 0 Boot Error. Specify if it was unable to boot from the BIOS on the Firmware Hub 0	00h (bit 0): No bootable media 01h (bit 1): Non-bootable diskette left in drive 02h (bit 2): PXE Server not found 03h (bit 3): Invalid boot sector 04h (bit 4): Timeout waiting for user selection of boot source	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
65	FWH 1 Boot Error / PICMG Front Board (160.96)	(Discrete 0x6f) / Boot Error (0x1e)	Firmware Hub 1 Boot Error. Specify if it was unable to boot from the BIOS on the Firmware Hub 1	00h (bit 0): No bootable media 01h (bit 1): Non-bootable diskette left in drive 02h (bit 2): PXE Server not found 03h (bit 3): Invalid boot sector 04h (bit 4): Timeout waiting for user selection of boot source	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	[7:4] - Optional offset from 'Severity' Event/Reading Code. (0Fh if unspecified). [3:0] - Optional offset from Event/Reading Type Code for previous discrete event state. (0Fh if unspecified.)	FFh
66	FRU1 Mp Over Icc / PICMG Front Board (160.96)	(Discrete 0x03) / Current (0x03)	FRU 1 Management Power Over Current	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
67	FRU1 Over Icc / PICMG Front Board (160.96)	(Discrete 0x03) / Current (0x03)	FRU 1 Over Current	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
68	FRU1 Sensor Err / PICMG Front Board (160.96)	(Discrete 0x6f) / Management Subsystem Health (0x28)	FRU 1 Error during Sensor discovery	00h (bit 0): sensor access degraded or unavailable (A sensor that is degraded will still return valid results, but may be operating with a slower response time, or may not detect certain possible states. A sensor that is unavailable is not able to return any results (scanning is disabled,) 01h (bit 1): controller access degraded or unavailable (The ability to access the controller has been degraded, or access is unavailable, but the party that is doing the monitoring cannot determine which.) 02h (bit 2): management controller off-line (controller cannot be accessed for normal operation because it has been intentionally taken off-line for a non-error condition. Note that any commands that are available must function according to specification.) 03h (bit 3): management controller unavailable (controller cannot be accessed because of an error condition) 04h (bit 4): Sensor failure (the sensor is known to be in error. It may still be accessible by software) 05h (bit 5): FRU failure	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension 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)
69	FRU2 Mp Over Icc / PICMG Front Board (160.96)	(Discrete 0x03) / Current (0x03)	FRU 2 Management Power Over Current	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
70	FRU2 Over Icc / PICMG Front Board (160.96)	(Discrete 0x03) / Current (0x03)	FRU 2 Over Current	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
71	FRU2 Sensor Err / PICMG Front Board (160.96)	(Discrete 0x6f) / Management Subsystem Health (0x28)	FRU 2 Error during Sensor discovery	00h (bit 0): sensor access degraded or unavailable (A sensor that is degraded will still return valid results, but may be operating with a slower response time, or may not detect certain possible states. A sensor that is unavailable is not able to return any results (scanning is disabled,) 01h (bit 1): controller access degraded or unavailable (The ability to access the controller has been degraded, or access is unavailable, but the party that is doing the monitoring cannot determine which.) 02h (bit 2): management controller off-line (controller cannot be accessed for normal operation because it has been intentionally taken off-line for a non-error condition. Note that any commands that are available must function according to specification.) 03h (bit 3): management controller unavailable (controller cannot be accessed because of an error condition) 04h (bit 4): Sensor failure (the sensor is known to be in error. It may still be accessible by software) 05h (bit 5): FRU failure	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension 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)
72	FRU3 Mp Over Icc / PICMG Front Board (160.96)	(Discrete 0x03) / Current (0x03)	FRU 3 Management Power Over Current	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh

Sensor 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
73	FRU3 Over Icc / PICMG Front Board (160.96)	(Discrete 0x03) / Current (0x03)	FRU 3 Over Current	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
74	FRU3 Sensor Err / PICMG Front Board (160.96)	(Discrete 0x6f) / Management Subsystem Health (0x28)	FRU 3 Error during Sensor discovery	00h (bit 0): sensor access degraded or unavailable (A sensor that is degraded will still return valid results, but may be operating with a slower response time, or may not detect certain possible states. A sensor that is unavailable is not able to return any results (scanning is disabled,) 01h (bit 1): controller access degraded or unavailable (The ability to access the controller has been degraded, or access is unavailable, but the party that is doing the monitoring cannot determine which.) 02h (bit 2): management controller off-line (controller cannot be accessed for normal operation because it has been intentionally taken off-line for a non-error condition. Note that any commands that are available must function according to specification.) 03h (bit 3): management controller unavailable (controller cannot be accessed because of an error condition) 04h (bit 4): Sensor failure (the sensor is known to be in error. It may still be accessible by software) 05h (bit 5): FRU failure	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension 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)
75	FRU0 Pwr Denied / PICMG Front Board (160.96)	(Discrete 0x03) / Platform Alert (0x24)	FRU 0 Power Denied	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Power Denial Cause 00=> CAUSE_EXPLICIT 01=> FRU_INFO 02=> TIMEOUT	-
76	FRU1 Pwr Denied / PICMG Front Board (160.96)	(Discrete 0x03) / Platform Alert (0x24)	FRU 1 Power Denied	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Power Denial Cause 00=> CAUSE_EXPLICIT 01=> FRU_INFO 02=> TIMEOUT	-
77	FRU2 Pwr Denied / PICMG Front Board (160.96)	(Discrete 0x03) / Platform Alert (0x24)	FRU 2 Power Denied	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Power Denial Cause 00=> CAUSE_EXPLICIT 01=> FRU_INFO 02=> TIMEOUT	-
78	FRU3 Pwr Denied / PICMG Front Board (160.96)	(Discrete 0x03) / Platform Alert (0x24)	FRU 3 Power Denied	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Power Denial Cause 00=> CAUSE_EXPLICIT 01=> FRU_INFO 02=> TIMEOUT	-
79	FRU0 FRU Agent / PICMG Front Board (160.96)	(Discrete 0x0a) / OEM FRU Information Agent (0xc5)	Board FRU 0 Data agent that verify FRU Data validity (checksum/E-key/etc)	Only States (00h, 01h, 02h, 06h, 08h) trigger an event 00h (bit 0) = transition to Running 01h (bit 1) = transition to In Test 02h (bit 2) = transition to Power Off 03h (bit 3) = transition to On Line 04h (bit 4) = transition to Off Line 05h (bit 5) = transition to Off Duty 06h (bit 6) = transition to Degraded 07h (bit 7) = transition to Power Save 08h (bit 8) = Install Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Event Data 2 is used as bit flag error Bit 7: unspecifiedError Bit 6: notPresentError Bit 5: multirecHeaderError Bit 4: multirecDataError Bit 3: timeout error Bit 2: ipmcError Bit 1: fruDataError Bit 0: commonHeaderError	Event Data 3 is used a bit flag error Bit 7: SetClockState Not Supported Bit 6: SetClockState Error Bit 5: SetPortState Not Supported Bit 4: SetPortState Error Bit 3: Clock Internal Mismatch Bit 2: Clock Match Error, Not a single clock matches Bit 1: Internal mismatch Bit 0: Match Error, Not in single link matches
80	FRU1 FRU Agent / PICMG Front Board (160.96)	(Discrete 0x0a) / OEM FRU Information Agent (0xc5)	Board FRU 1 Data agent that verify FRU Data validity (checksum/E-key/etc)	Only States (00h, 01h, 02h, 06h, 08h) trigger an event 00h (bit 0) = transition to Running 01h (bit 1) = transition to In Test 02h (bit 2) = transition to Power Off 03h (bit 3) = transition to On Line 04h (bit 4) = transition to Off Line 05h (bit 5) = transition to Off Duty 06h (bit 6) = transition to Degraded 07h (bit 7) = transition to Power Save 08h (bit 8) = Install Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Event Data 2 is used as bit flag error Bit 7: unspecifiedError Bit 6: notPresentError Bit 5: multirecHeaderError Bit 4: multirecDataError Bit 3: timeout error Bit 2: ipmcError Bit 1: fruDataError Bit 0: commonHeaderError	Event Data 3 is used a bit flag error Bit 7: SetClockState Not Supported Bit 6: SetClockState Error Bit 5: SetPortState Not Supported Bit 4: SetPortState Error Bit 3: Clock Internal Mismatch Bit 2: Clock Match Error, Not a single clock matches Bit 1: Internal mismatch Bit 0: Match Error, Not in single link matches
81	FRU2 FRU Agent / PICMG Front Board (160.96)	(Discrete 0x0a) / OEM FRU Information Agent (0xc5)	Board FRU 2 Data agent that verify FRU Data validity (checksum/E-key/etc)	Only States (00h, 01h, 02h, 06h, 08h) trigger an event 00h (bit 0) = transition to Running 01h (bit 1) = transition to In Test 02h (bit 2) = transition to Power Off 03h (bit 3) = transition to On Line 04h (bit 4) = transition to Off Line 05h (bit 5) = transition to Off Duty 06h (bit 6) = transition to Degraded 07h (bit 7) = transition to Power Save 08h (bit 8) = Install Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Event Data 2 is used as bit flag error Bit 7: unspecifiedError Bit 6: notPresentError Bit 5: multirecHeaderError Bit 4: multirecDataError Bit 3: timeout error Bit 2: ipmcError Bit 1: fruDataError Bit 0: commonHeaderError	Event Data 3 is used a bit flag error Bit 7: SetClockState Not Supported Bit 6: SetClockState Error Bit 5: SetPortState Not Supported Bit 4: SetPortState Error Bit 3: Clock Internal Mismatch Bit 2: Clock Match Error, Not a single clock matches Bit 1: Internal mismatch Bit 0: Match Error, Not in single link matches
82	FRU3 FRU Agent / PICMG Front Board (160.96)	(Discrete 0x0a) / OEM FRU Information Agent (0xc5)	Board FRU 3 Data agent that verify FRU Data validity (checksum/E-key/etc)	Only States (00h, 01h, 02h, 06h, 08h) trigger an event 00h (bit 0) = transition to Running 01h (bit 1) = transition to In Test 02h (bit 2) = transition to Power Off 03h (bit 3) = transition to On Line 04h (bit 4) = transition to Off Line 05h (bit 5) = transition to Off Duty 06h (bit 6) = transition to Degraded 07h (bit 7) = transition to Power Save 08h (bit 8) = Install Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Event Data 2 is used as bit flag error Bit 7: unspecifiedError Bit 6: notPresentError Bit 5: multirecHeaderError Bit 4: multirecDataError Bit 3: timeout error Bit 2: ipmcError Bit 1: fruDataError Bit 0: commonHeaderError	Event Data 3 is used a bit flag error Bit 7: SetClockState Not Supported Bit 6: SetClockState Error Bit 5: SetPortState Not Supported Bit 4: SetPortState Error Bit 3: Clock Internal Mismatch Bit 2: Clock Match Error, Not a single clock matches Bit 1: Internal mismatch Bit 0: Match Error, Not in single link matches

Sensor 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
83	IPMC Storage Err / PICMG Front Board (160.96)	(Discrete 0x6f) / Management Subsystem Health (0x28)	Management sub-system health: non volatile memory error.	00h (bit 0): sensor access degraded or unavailable (A sensor that is degraded will still return valid results, but may be operating with a slower response time, or may not detect certain possible states. A sensor that is unavailable is not able to return any results (scanning is disabled,) 01h (bit 1): controller access degraded or unavailable (The ability to access the controller has been degraded, or access is unavailable, but the party that is doing the monitoring cannot determine which.) 02h (bit 2): management controller off-line (controller cannot be accessed for normal operation because it has been intentionally taken off-line for a non-error condition. Note that any commands that are available must function according to specification.) 03h (bit 3): management controller unavailable (controller cannot be accessed because of an error condition) 04h (bit 4): Sensor failure (the sensor is known to be in error. It may still be accessible by software) 05h (bit 5): FRU failure	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension 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)
84	Firmware Upg Mng / PICMG Front Board (160.96)	(Discrete 0x6f) / OEM FWUM Status (0xc7)	Firmware Upgrade Manager Status	00h (bit 0):First Boot after upgrade The IPMC has been updated and reset. 01h (bit 1):First Boot after rollback (error) The FWUM automatically rollback the IPMC and the IPMC has been reset. 02h (bit 2):First Boot after errors (watchdog) The FWUM watchdog has expired and the IPMC has been reset. 03h (bit 3):First Boot after manual rollback The FWUM has rollback the IPMC at the user's request and the IPMC has been reset. 08h (bit 4):Firmware Watchdog Bite, reset occur Indicates the FWUM detected an IPMC internal watchdog reset. 0Eh (bit 5):Debug Mode activated Indicates the FWUM has entered "Debug Mode" Debug build Only,otherwise reserved	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
85	IpmC Reboot / PICMG Front Board (160.96)	(Discrete 0x03) / Platform Alert (0x24)	IPMC reboot detection	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
86	Ver change / PICMG Front Board (160.96)	(Discrete 0x6f) / Version Change (0x2b)	IPMC firmware upgrade detection	00h (bit 0): Hardware change detected with associated Entity. Informational. This offset does not imply whether the hardware change was successful or not. Only that a change occurred. 01h (bit 1): Firmware or software change detected with associated Entity. Informational. Success or failure not implied. 02h (bit 2): Hardware incompatibility detected with associated Entity. 03h (bit 3): Firmware or software incompatibility detected with associated Entity. 04h (bit 4): Entity is of an invalid or unsupported hardware version. 05h (bit 5): Entity contains an invalid or unsupported firmware or software version. 06h (bit 6): Hardware Change detected with associated Entity was successful. (deassertion event means 'unsuccessful'). 07h (bit 7): Software or F/W Change detected with associated Entity was successful. (deassertion event means 'unsuccessful')	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM 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 type 00h unspecified 01h management controller device ID (change in one or more fields from 'Get Device ID') 02h management controller firmware revision 03h management controller device revision 04h management controller manufacturer ID 05h management controller IPMI version 06h management controller auxiliary firmware ID 07h management controller firmware boot block 08h other management controller firmware 09h system firmware (EFI / BIOS) change 0Ah SMBIOS change 0Bh operating system change 0Ch operating system loader change 0Dh service or diagnostic partition change 0Eh management software agent change 0Fh management software application change 10h management software middleware change 11h programmable hardware change (e.g. FPGA) 12h board/FRU module change (change of a module plugged into associated entity) 13h board/FRU component change (addition or removal of a replaceable component on the board/FRU that is not tracked as a FRU)	FFh
87	SEL State / PICMG Front Board (160.96)	(Discrete 0x6f) / Event Logging Disabled (0x10)	SEL stateSpecify if the SEL is full	00h (bit 0): Correctable Memory Error Logging Disabled 01h (bit 1): Event 'Type' Logging Disabled 02h (bit 2): Log Area Reset/Cleared 03h (bit 3): All Event Logging Disabled 04h (bit 4): SEL Full 05h (bit 5): SEL Almost Full 06h (bit 6): Correctable Machine Check Error Logging Disabled	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension 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)
88	IPMI Info-1 / PICMG Front Board (160.96)	(Discrete 0x70) / OEM Firmware Info (0xc0)	Internal Management Controller firmware diagnostic	Internal use only, No additionnal info availble	Should not generate Event. Please contact Kontron Canada Inc. Technical Support if an Event is triggered.	-	-
89	IPMI Info-2 / PICMG Front Board (160.96)	(Discrete 0x71) / OEM Firmware Info (0xc0)	Internal Management Controller firmware diagnostic	Internal use only, No additionnal info availble	Should not generate Event. Please contact Kontron Canada Inc. Technical Support if an Event is triggered.	-	-
90	UNUSED	-	-	-	-	-	-
91	DCM:Temp Board / I/O Module (44.96)	(Threshold 0x01) / Temperature (0x01)	Daughter Card Mezzanine Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
92	DCM:Temp LAN / I/O Module (44.96)	(Threshold 0x01) / Temperature (0x01)	Daughter Card Mezzanine LAN Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
93	DCM:Vcc +1.1V / I/O Module (44.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 1.1v Daughter Card Mezzanine power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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

Sensor 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
94	DCM:Vcc +1.2V / I/O Module (44.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 1.2v Daughter Card Mezzanine power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
95	DCM:Vcc +1.8V / I/O Module (44.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 1.8v Daughter Card Mezzanine power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
96	DCM:Vcc +3.3V / I/O Module (44.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 3.3v Daughter Card Mezzanine power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
97	DCM:Vcc +3.3VSUS / I/O Module (44.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 3.3V suspend (management) of Daughter Card Mezzanine power supply (Volts)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
98	DCM:Vcc +12V / I/O Module (44.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on 12v Daughter Card Mezzanine power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
99	RTM:IPMI Info-1 / PICMG Rear Transition Module (192.96)	(Discrete 0x70) / OEM Firmware Info (0xc0)	Internal Management Controller firmware diagnostic	Internal use only, No additionnal info availble	Should not generate Event. Please contact Kontron Canada Inc. Technical Support if an Event is triggered.	-	-
100	RTM:IPMI Info-2 / PICMG Rear Transition Module (192.96)	(Discrete 0x71) / OEM Firmware Info (0xc0)	Internal Management Controller firmware diagnostic	Internal use only, No additionnal info availble	Should not generate Event. Please contact Kontron Canada Inc. Technical Support if an Event is triggered.	-	-
101	RTM:FRU Agent / PICMG Rear Transition Module (192.96)	(Discrete 0x0a) / OEM FRU Information Agent (0xc5)	FRU Information Agent - FRU0 Data Error Detection	Only States (00h, 01h, 02h, 06h, 08h) trigger an event 00h (bit 0) = transition to Running 01h (bit 1) = transition to In Test 02h (bit 2) = transition to Power Off 03h (bit 3) = transition to On Line 04h (bit 4) = transition to Off Line 05h (bit 5) = transition to Off Duty 06h (bit 6) = transition to Degraded 07h (bit 7) = transition to Power Save 08h (bit 8) = Install Error	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Event Data 2 is used as bit flag error Bit 7: unspecifiedError Bit 6: notPresentError Bit 5: multirecHeaderError Bit 4: multirecDataError Bit 3: timeout error Bit 2: ipmcError Bit 1: fruDataError Bit 0: commonHeaderError	Event Data 3 is used a bit flag error Bit 7: SetClockState Not Supported Bit 6: SetClockState Error Bit 5: SetPortState Not Supported Bit 4: SetPortState Error Bit 3: Clock Internal Mismatch Bit 2: Clock Match Error, Not a single clock matches Bit 1: Internal mismatch Bit 0: Match Error, Not in single link matches
102	RTM:Module HS / PICMG Rear Transition Module (192.96)	(Discrete 0x6f) / OEM RTM Module Hotswap (0xf2)	AMC.0 mandatory Module Hot Swap state	0h (bit 0): Module Handle Closed 1h (bit 1): Module Handle Opened 2h (bit 2): Quiesced 3h (bit 3): Backend Power Failure 4h (bit 4): Backend Power Shut Down 5h-Fh = Reserved	bit[7:4] = 00h (unspecified Event Data 2 and 3] bit[3:0] = Current Event 0h = Module Handle Closed 1h = Module Handle Opened 2h = Quiesced 3h = Backend Power Failure 4h = Backend Power Shut Down 5h-Fh = Reserved	FFh	FFh
103	RTM:IPMBL State / PICMG Rear Transition Module (192.96)	(Discrete 0x6f) / OEM IPMBL Link State (0xc3)	IPMB-L branch from FRU0 fault detection sensor	02h (bit 2): IPMB-L Disable 03h (bit 3): IPMB-L Enable	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	Always 0	Bit[7:3]: Always 0 Bit[2:0]: 0h = No failure 1h = Unable to drive clock HI 2h = Unable to drive data HI 3h = Unable to drive clock LO 4h = Unable to drive data LO 5h = clock low timeout 6h = Under test (the IPM Controller is attempting to determine who is causing a bus hang) 7h = Undiagnosed Communication Failure
104	RTM:Storage Err / PICMG Rear Transition Module (192.96)	(Discrete 0x6f) / Management Subsystem Health (0x28)	Management sub-system health: non volatile memory error.	00h (bit 0): sensor access degraded or unavailable (A sensor that is degraded will still return valid results, but may be operating with a slower response time, or may not detect certain possible states. A sensor that is unavailable is not able to return any results (scanning is disabled,) 01h (bit 1): controller access degraded or unavailable (The ability to access the controller has been degraded, or access is unavailable, but the party that is doing the monitoring cannot determine which.) 02h (bit 2): management controller off-line (controller cannot be accessed for normal operation because it has been intentionally taken off-line for a non-error condition. Note that any commands that are available must function according to specification.) 03h (bit 3): management controller unavailable (controller cannot be accessed because of an error condition) 04h (bit 4): Sensor failure (the sensor is known to be in error. It may still be accessible by software) 05h (bit 5): FRU failure	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension 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)

Sensor 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
105	RTM:Temp Air In / PICMG Rear Transition Module (192.96)	(Threshold 0x01) / Temperature (0x01)	Ait Inlet Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
106	RTM:Temp Air Out / PICMG Rear Transition Module (192.96)	(Threshold 0x01) / Temperature (0x01)	Ait Outlet Temperature (Degrees)	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
107	RTM:Vcc +3.3V / PICMG Rear Transition Module (192.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 3.3V backend power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
108	RTM:Vcc +3.3VSB / PICMG Rear Transition Module (192.96)	(Threshold 0x01) / Voltage (0x02)	3.3 V Suspend	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
109	RTM:Vcc +5V / PICMG Rear Transition Module (192.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 5V backend power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
110	RTM:Vcc +12V / PICMG Rear Transition Module (192.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board 12V payload power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
111	RTM:Vcc BlueLed / PICMG Rear Transition Module (192.96)	(Threshold 0x01) / Voltage (0x02)	Voltage on board blue LED VPUMP suspend power supply	Threshold Values: 00h : Lower Non-critical - going low 01h : Lower Non-critical - going high 02h : Lower Critical - going low 03h : Lower Critical - going high 04h : Lower Non-recoverable - going low 05h : Lower Non-recoverable - going high 06h : Upper Non-critical - going low 07h : Upper Non-critical - going high 08h : Upper Critical - going low 09h : Upper Critical - going high 0Ah : Upper Non-recoverable - going low 0Bh : Upper Non-recoverable - going high	[7:6] - 00b = unspecified byte 2 01b = trigger reading in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = trigger threshold value in byte 3 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 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
112	RTM:Health Error / PICMG Rear Transition Module (192.96)	(Discrete 0x03) / Platform Alert (0x24)	General health status, Aggregation of critical sensor. This list is flexible and could be adjust based on customer requirements.	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
113	RTM:MMC Reboot / PICMG Rear Transition Module (192.96)	(Discrete 0x03) / Platform Alert (0x24)	IPMC reboot detection	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
114	RTM:Ver change / PICMG Rear Transition Module (192.96)	(Discrete 0x03) / Version Change (0x2b)	Firmware Change Detection	00h (bit 0): State Deasserted 01h (bit 1): State Asserted	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh
115	RTM:Power Good / PICMG Rear Transition Module (192.96)	(Discrete 0x77) / Power Supply (0x08)	Actual power good status	Bit 0: VccGood 12V Bit 1: VccGood 5V Bit 2: VccGood 3.3V Bit 3: VccGood 2.5V Bit 4: VccGood 1.8V Bit 5: VccGood 1.5V Bit 6: VccGood 1.2V Bit 7: VccGood Core Bit 8: VccGood -5V Bit 9: VccGood 1.1V Bit 10: VccGood 1.05V Bit 11: VccGood 1.25V	[7:6] - 00b = unspecified byte 2 01b = previous state and/or severity in byte 2 10b = OEM code in byte 2 11b = sensor-specific event extension code in byte 2 [5:4] - 00b = unspecified byte 3 01b = reserved 10b = OEM code in byte 3 11b = sensor-specific event extension code in byte 3 [3:0] - Offset from Event/Reading Code for discrete event state	FFh	FFh

Annex B – Sensor-Specific Event

Sensor Type	Sensor Type Code	Sensor Offset	Event Data 2	Event Data 3
System Event	12h	00h	No Event Generated	
		01h	No Event Generated	
		02h	No Event Generated (this event would typically require system-specific diagnostics to determine FRU / failure type)	
		03h	(see PICMG 2.0: 31.12, Get Auxiliary Log Status Command and 31.13, Set Auxiliary Log Status Command, for more information) [7:4] - Log Entry Action 0h = entry added 1h = entry added because event did not be map to standard IPMI event 2h = entry added along with one or more corresponding SEL entries 3h = log cleared 4h = log disabled 5h = log enabled all other = reserved [3:0] - Log Type 0h = MCA Log 1h = OEM 1 2h = OEM 2 all other = reserved	
		04h	The following bits reflect the PEF Actions that are about to be taken after the event filters have been matched. The event is captured before the actions are taken. [7:6] - reserved [5] - 1b = Diagnostic Interrupt (NMI) [4] - 1b = OEM action [3] - 1b = power cycle [2] - 1b = reset [1] - 1b = power off	
		05h	This event can be used to record when changes are made to the timestamp clock(s) so that relative time differences between SEL entries can be determined. See Note [1]. [7] - first/second 0b = event is first of pair. 1b = event is second of pair. [6:4] - reserved [3:0] - Timestamp Clock Type 0h = SEL Timestamp Clock updated. (Also used when both SEL and SDR Timestamp clocks are linked together.) 1h = SDR Timestamp Clock updated.	
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 system-board failure. 05h Unrecoverable diskette subsystem failure. 06h Unrecoverable hard-disk controller failure. 07h Unrecoverable PS/2 or USB keyboard failure. 08h Removable boot media not found 09h Unrecoverable video controller failure 0Ah No video device detected 0Bh Firmware (BIOS) ROM corruption detected 0Ch CPU voltage mismatch (processors that share same supply have mismatched voltage requirements) 0Dh CPU speed matching failure 0Eh to FFh reserved	
		01h	uses same Event Data 2 definition as following System Firmware Progress offset	
		02h	00h Unspecified. 01h Memory initialization. 02h Hard-disk initialization 03h Secondary processor(s) initialization 04h User authentication 05h User-initiated system setup 06h USB resource configuration 07h PCI resource configuration 08h Option ROM initialization 09h Video initialization 0Ah Cache initialization 0Bh SM Bus initialization 0Ch Keyboard controller initialization 0Dh Embedded controller/management controller initialization 0Eh Docking station attachment 0Fh Enabling docking station 10h Docking station ejection 11h Disabling docking station 12h Calling operating system wake-up vector 13h Starting operating system boot process, e.g. calling Int 19h 14h Baseboard or motherboard initialization 15h reserved 16h Floppy initialization 17h Keyboard test 18h Pointing device test 19h Primary processor initialization 1Ah to FFh reserved	

Sensor Type	Sensor Type Code	Sensor Offset	Event Data 2	Event Data 3
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	-	-
		03h	-	-
		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
Management Subsystem Health	28h	00h	-	-
		01h	-	-
		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
0h	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 to M2, M2 to M3, M3 to M4, M4 to M5, M5 to M6, and M6 to M1 transitions.
1h	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 to M3, M4 to M6, M5 to M4, and M5 to M6 transitions.
2h	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, and M5 to M4 transitions.
3h	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 M2, M3 to M6, M4 to M5, and M5 to M4 transitions
4h	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 M6 to M7, M7 to M1, M7 to M2, M7 to M3, M7 to M4, M7 to M5 and M7 to M6 transitions.
5h	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 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.
6h	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 to M0, M6 to M0, and M7 to M0 transitions.
7h	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 Shelf and is no longer available. Valid for the M7 to M0 state transition.
8h	Invalid Hardware Address Detected. This is an error condition where the Hardware Address did not pass the parity check. Valid for the M0 to M0 transition.
9h	Unexpected Deactivation. The FRU has transitioned to deactivating without requesting permission from the Shelf Manager first. Valid for M4 to M6 transition.
Ah	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, 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