

intel® Technical Advisory

TA-550-1

5200 NE Elam Young Parkway
Hillsboro, OR 97124

April 25, 2002

Erroneous temperature readings from onboard thermal sensors on some SCB2 (SCSI) Server Boards

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Products Affected

SCB2SCSI (TA# A57951-003)
BCBSBB (TA# A63252-002)
SA46044 (TA# A66597-002)

Description

Some SCB2 (SCSI) server boards may report erroneous thermal readings from the onboard thermal sensors. Possible boards affected by this issue will have the following PBA number:

SCB2 SCSI boards – A46044-**607**

In addition, only SCB2 (SCSI) boards with serial numbers that begin with KRC2209xxxxx through KRC2215xxxxx maybe affected by this issue.

PBA and Serial numbers can be found on a white label affixed to the edge of the server board next to the PCI riser slot connector. Serial numbers can also be found on the outside of the packing box.

Systems with the affected SCB2 (SCSI) Server boards may exhibit the following:

- Inaccurate thermal events may or may not be logged to the System Event Log (SEL)
- The BMC may or may not change the System Fault LED to amber. This is dependent on whether a critical thermal temperature was detected.
- System fans may speed up

If server monitoring software is used then:

- It will display erroneous temperatures for the onboard thermal sensors, ranging from 10° to 20°C higher than actual temperatures
- It may cause false system events to occur depending on how the software is configured.

Root Cause

An error at Intel's manufacturing facility resulted in having –607 SCB2 (SCSI) server boards to be assembled with one of two revisions (rev 4 or rev 7) of an ADM1026 sensor chip (located at U4G1). Boards assembled with the rev 4 chip are NOT affected by this issue. –607 SCB2 (SCSI) Boards assembled with the rev 7 chip are affected by this issue, as they should also have had a capacitor removed (C3D9), which was not. The added capacitance causes the rev 7 sensor chip to generate random false temperatures that have been seen to range from 10° to 20°C higher than actual temperatures.

NOTE: A46044-607 SCB2 (SCSI) boards that have the rev 4 ADM1026 chip are not affected by this issue

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Corrective Action / Resolution

- All -607 SCB2 (SCSI) server boards shipped from Intel after April 15, 2002 will be screened to have the rev. 4 ADM1026 sensor chip. All screened product will show a black dot on the serial number label on the server board as well as on the outside of the packaging next to the serial number on the printed label.



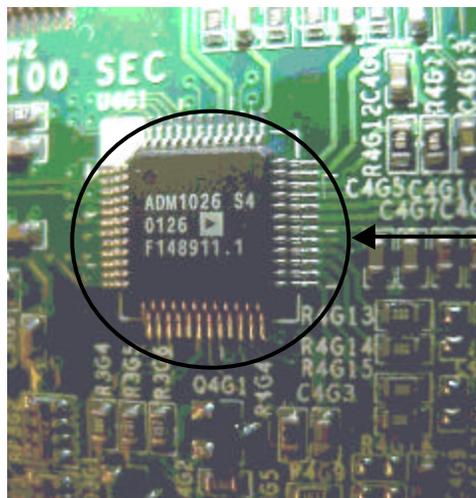
Black dot showing a screened -607 board

- All -608 SCB2 server boards will be built with the rev. 4 ADM1026 sensor chip
- All -609 SCB2 server boards will be built with the rev. 7 ADM1026 sensor chip and have the required capacitor removed.

Recommendations

A) Intel recommends screening all -607 SCB2 (SCSI) server boards for the rev. 4 ADM1026 thermal sensor chip. One of two methods can be used:

- A visual inspection of the server board. The ADM1026 chip is located next to the legacy floppy connector at designator U4G1. The rev. 4 ADM1026 chip will have a "ADM1026 S4" marking silk screened on the chip (See the photograph below). All SCB2 boards with this revision of the sensor chip are acceptable. Unacceptable -607 SCB2 boards will have a sensor chip with "ADM1026 JST" silk screened on it.



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2. If a board is integrated into a chassis and is operational, and a visual inspection cannot be performed, Intel has provided a DOS (HECVER.EXE), Windows 2000* (HECWIN2K.EXE), or Red Hat* Linux 7.2 (HECETAID) based utilities to scan the server board for the appropriate board revision and sensor chip. See the "Utility Instructions" text file for additional information on running the individual scan utilities. If a rev 4 ADM1026 is detected, the utilities will display that the board is "Not affected by manufacturing excursion". If a rev 7 ADM1026 is detected on a -607 board, the utilities will display the board PBA number, board serial number, the revision of the ADM1026 chip, and refer you back to this Technical Advisory for further instructions.

If a rev 7 ADM1026 sensor chip is found on a -607 SCB2 server board, then Intel recommends one of the following:

A) If an Intel SR1200 or SR2200 server chassis is used with Intel server management software, then Intel recommends disabling the onboard thermal sensors using the provided utility (TA550.EXE). See the "Utility Instructions" text file for additional information on running the TA550.EXE utility. In Intel chassis using Intel server management, the onboard thermal sensors are not the primary data source of the BMC to determine appropriate system cooling operations and reporting. The primary thermal sensor used by the BMC is located on the system's front panel board. This sensor is independent of the ADM1026 sensor chip and is NOT affected by the rev 7 ADM1026 sensor issue. By disabling the onboard thermal sensors, no primary system thermal monitoring is lost. The BMC will continue to effectively monitor the ambient temperature readings of the front panel sensor and not have the erroneous readings of the secondary onboard thermal sensors generating false events.

Or

B) If your SCB2 server board is integrated into a non-Intel chassis and/or utilizes a custom or non-Intel server management solution, disabling the onboard thermal sensors may or may not be a recommended solution, as the alternate server management solution may utilize the onboard thermal sensors as the primary thermal data source. In this case, you may wish to return the board.

If a rev 7 ADM1026 sensor chip is found on a -607 SCB2 server board and you wish to return the board, please follow your standard warranty return process. Information needed to return the board for this issue are as follows:

- Reference to TA-550 (This Technical Advisory)
- Board PBA number
- Board Serial Number

Please contact your Intel Sales Representative or representative at the point of purchase if you require more specific information about this issue.

Enterprise Platforms & Services Division
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