intel. Technical Advisory

TA-667-1

5200 NE Elam Young Parkway
Hillsboro, OR 97124

September 15, 2003

Intel® Server Chassis SPSH4 and SRSH4 SAF-TE Controller Crystal Operating Outside Design Specifications

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Products Affected

- The SCSI Accessed Fault Tolerant Enclosure (SAF-TE) Controller Card (PBA A42862-110) used in the Intel® Server Chassis SPSH4 and SRSH4 products, spares kits, and accessory kits.
- SCSI upgrade kit (AXX2HSDRVUG) used in the Intel ® Server Chassis SC5250-E

855255	SSHCBPE
855404	SSHCPPENA
855256	SSHCBPBK
855409	SSHCBPBKNA
855230	SSHCBRBK
855407	SSHCBPBKNA
855229	SSHDRVBK
855408	SSHDVRBKNA
846528	AD2C3HSCDRVUG
844526	FC3BOARDSPRS
844693	FD2BOARDSPRS

Problem Statement

Some SAF-TE controller cards, PBA A42862-110, were manufactured with a crystal that operates at a frequency outside defined design specifications (13.3 MHz instead of the expected 40.0 MHz). This incorrect frequency results in RAID failures (eg., builds fail, drives go off-line, drives not found, cannot copy files, cannot make properly) when systems configured with any HW RAID controller interrogate the SCSI HSBP SAF-TE controller using standard SAF-TE SCSI based commands.

Who is Vulnerable?

Intel® has determined that users of the following SAF-TE cards are vulnerable to the "crystal" issue:

- Product built between June 30, 2003 (WW**27**) and September 5, 2003 (WW**36**)
- Product bearing the Serial Numbers: IMJR3**27**XXXXXX through IMJR3**36**XXXXXX
  - Decode Mechanism is: First Digit=Year=2003, Second and Third digits=Work-Week, X=Don't Care (DC)
- Crystal in location Y5A1 on the SAF-TE card is marked with "40.0[N] XXXX"

Your system is not vulnerable to the "crystal" issue if either of the following conditions apply to you:

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- Product built **before** June 30, 2003 (Serial #: IMJR3**26**XXXXXX) <u>OR</u> **after** September 5, 2003 (Serial #: IMJR3**37**XXXXXX
- System configuration is SCSI only (i.e., use SCSI drives in "non-RAID" configurations only)
- System configuration is a non-SAF-TE RAID
- Crystal in location Y5A1 on the SAF-TE card is marked with "R400 XXXX"

Failure Modes

The following failure modes have been observed with HW/RAID configured systems to date:

- Hard Drives marked off-line
- RAID initialization failed
- Copy from CD-ROM failed (while installing OS)
- RAID controller failed to detect HS drive
- Auto-Rebuild of RAID array failed

Root Cause

The SAF-TE card design specifications require the use of a crystal with fundamental frequency (f0) of 40.0 MHz. However, the failing SAF-TE cards (supplied by a single-vendor) were determined to have been built with 3rd overtone (3f0=3*13.3MHz) crystals.

Corrective Action / Resolution

Intel has initiated the following steps to resolve this issue:

- All existing inventory is being screened for the "crystal" issue.
- A light-colored sticker has been added on the shipping box for Intel® Server Chassis SPSH4 and SRSH4 products, spares and accessory kits with serial number work-weeks between 27 and 36 that have already been screened by Intel for this issue.
- All new SAF-TE cards are now being built with the f0=40MHz crystals (supplied by a different vendor)

Customers are strongly encouraged to:

- Perform a visual screen of their current inventory of SPSH4 and SRSH4 chassis products, spares, and accessory kits
- Use the following "Decode-Mechanism", based on Serial Number, to determine potentially suspect shipments on all Intel® Server Chassis SPSH4 and SRSH4 products, spares, and accessory kits:
  - ➢ Example: Serial #:ECHK331XXXX=>First Digit=3=2003(YR), Second and Third Digits=Work-Week, X=Don't Care
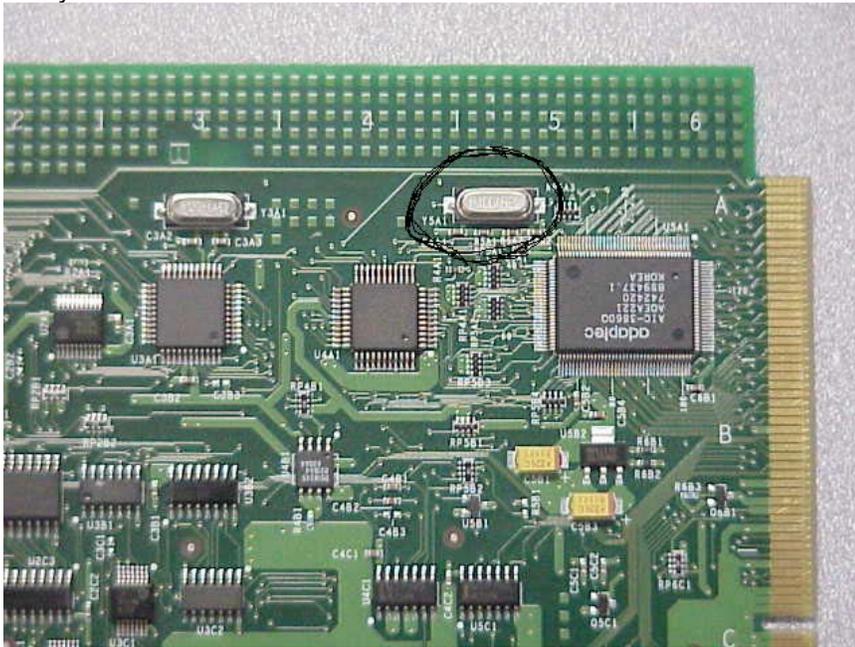
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Visual Screen Process

Customers with Intel Server Chassis SPSH4 and SRSH4 chassis products, spares, and accessory kits with serial number indicating product was built between WW27-36 (both inclusive) are suggested they visually examine the SAF-TE card to determine if it is affected by the "crystal" issue. To screen the SAF-TE card please follow the steps outlined below:

1. Remove hot swap drive bay from the Intel Server Chassis SPSH4 and SRSH4 chassis (for chassis products).
2. Remove the white plastic piece (part number 743492-004) attached to the hot swap backplane bay with four screws.
3. Remove the hot swap backplane board and the attached SAFTE card from the hot swap backplane bay.
4. Find the crystal (silver colored) at location Y5A1on the SAFTE card (PBA A42862-110). The crystal location is shown in the photograph below.
5. Crystals marked with "R400 XXXX" are NOT affected by this issue. Crystals marked with "40.0 [N] XXXX" are affected by this issue. The XXXX markings are date-code related and should be considered as don't cares for the "crystal" issue

Customers who have material affected by this issue should obtain replacement product through normal warranty procedures. To get parts contact Intel using your normal warranty process. Please indicate that you are calling regarding TA number 667-1, and have the following information when you call; the part number requested, and the serial number(s) for the system(s) or board(s) needing the replacement part.

Please contact your Intel Sales Representative if you require more specific information about this issue.

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