

intel® Technical Advisory

TA-0414-05

5200 NE Elam Young Parkway
Hillsboro, OR 97124

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October, 14, 2002

Timing Margin Increased On SKA4 Baseboards

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Products Affected

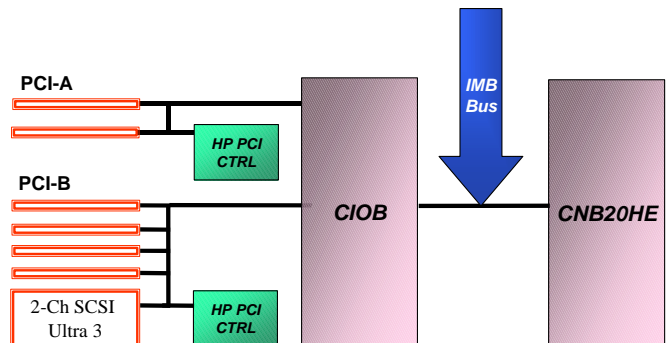
Product Type	Product Code
SKA4 Server Baseboard	BKO2HE
SRKA4 Server Platform	SKODVHI, SKODVBK, SKODVBS, ISP4400, SKODVBKHI
SPKA4 Server Platform	SKOC2HI, SKOC2BS, SKOC2BSxx

Description

Intel has confirmed the possibility of compressed clock signals on the chipset downstream IMB bus between the Serverworks Serverset III HE*, "CIOB" and "HE" ASICs, causing a resulting timing margin loss relative to the data signal in the downstream direction. Intel's investigation indicates that due to the intermittent nature of the issue, manufacturing tests may not have screened this issue completely and therefore some exposure in the installed base is probable on all 751519-5xx, and 751519-603 baseboards.

The margin loss caused by the compressed IMB clock signals could potentially cause incorrect data transfer at the CIOB resulting in an undetected disk write error or other undetected PCI write error.

SKA4 Baseboard Focus Sub-section



How to identify Affected Products

The SKA4 baseboard revision number is indicated on a white label near the IO connector space on the board. It will be in the form of PBA 751519-xxxx where "xxxx" is a three digit number followed by an optional letter indicating the actual revision of the board. Please refer to the baseboard layout diagram for location information

The following SKA4 baseboard revisions may have exposure to the compressed chipset IMB clock.

- PBA 751519-507 and -507A through -507E
- PBA 751519-508 and -508A through -508E
- PBA 751519-509 and -509A through -509E
- PBA 751519-510 and -510A through -510E
- PBA 751519-603

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Corrective Action / Resolution

Intel has implemented a resolution to this issue by reconfiguring the chipset IMB bus. The resolution involves changing the baseboard by removing three resistors and adding four other resistors as shown below. These changes configure the chipset IMB bus to provide additional timing margin. As a result, the PCI-A bus will continue to be set at an operating speed of 33 MHz to match system specifications and the option to change this bus speed to 66 MHz via BIOS setup is removed.

Remove the resistors from the following locations:

R5F7
R6F6
R5H3

Add resistors to the following locations:

R5F11 (0 ohm, 5%, 1/16W)
R5F6 (0 ohm, 5%, 1/16W)
R6F7 (1k, 5%, 1/16W)
R5H2 (1k, 5%, 1/16W)

Update to BIOS 52.1, which incorporates changes required for compatibility with the fore mentioned hardware changes.

NOTE: BIOS versions prior to BIOS 52.1 are not compatible with the fore mentioned hardware changes. In general, a BIOS earlier than BIOS 52.1 will work, however, if it is used in combination with a 66 MHz capable adapter installed in the PCI-A bus, abnormal behavior, including lockup of PCI Bus A, may occur. Please see the following *Table 1: PBA Board revision and BIOS Support* for more information and compatibility.

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Table 1: PBA Board revision and BIOS Support

Note: For all 66 MHz operation please see Technical Advisory TA-0341 for 66MHz operation errata.

Board PBA Rev	BIOS	ISC Support	PCI Bus A 66 MHz Operation
751519-507	3x.x	ISC 2.3	Enabled.
751519-507A through – 507E	4x.x to 42.0		
751519-508	42.1	ISC 2.3	Optional via BIOS Setup.
751519-508A through – 508E	50.x	ISC 3.0	Enabled.
751519-509	50.1	ISC 3.0	Optional via BIOS Setup.
751519-509A through – 509E	52.0	ISC 2.3 ISC 3.0	Optional via BIOS Setup.
751519-510	52.1	ISC 2.3	No 66 MHz operation.
751519-510A through – 510E		ISC 3.0	
751519-603			
-510F, -603A, and -605	3x.x	ISC 2.3	No 66 MHz operation. Lock-up of PCI-A bus if 66 MHz capable adapter is installed.
	4x.x to 42.0		
	42.1	ISC 2.3	No 66 MHz operation. Lock-up of PCI-A bus if 66 MHz capable adapter is installed <u>and enable in BIOS setup.</u>
	50.x	ISC 3.0	No 66 MHz operation. Lock-up of PCI-A bus if 66 MHz capable adapter is installed.
	50.1	ISC 3.0	No 66 MHz operation. Lock-up of PCI-A bus if 66 MHz capable adapter is installed <u>and enable in BIOS setup.</u>
	52.0	ISC 2.3 ISC 3.0	No 66 MHz operation. Lock-up of PCI-A bus if 66 MHz capable adapter is installed <u>and enable in BIOS setup.</u>
	52.1	ISC 2.3 ISC 3.0	No 66 MHz operation.

What is Intel doing for new SKA4 baseboards and systems?

All new SKA4 baseboards rev. 751519-605 (See PCN-101736 and PCN-101738 for details), have the update implemented.

Customer inventory of SKA4 baseboards prior to 751519-605 and systems containing SKA4 baseboards prior to 751519-605 held at Authorized Distributors and OEMs should be returned to Intel (referencing this *Technical Advisory* TA-0414) via the standard RMA procedure defined for their Intel account.

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What is Intel doing for installed product?

Although more testing is required to fully characterize the installed base exposure, as a proactive and precautionary measure Intel is making this same resolution available on all previous production boards via a baseboard update. Intel is advising its customers to update their existing installed base, if they are concerned with the issue.

At the customers' discretion, based on their assessment of this advisory, Intel will provide updated 751519- 5xx or 751519-60x baseboards on a like-for-like exchange basis. Typically customer 751519-5xx baseboards will be updated to 751519-510F and customer 751519-603 baseboards will be updated to 751519-603As, although at Intel's discretion some customers may receive a baseboard version later than the customers' original version.

To obtain updates for the SKA4 update please use the following procedure for your account type.

What should Intel Channel members do?

Channel members should use the standard warranty procedure defined for their Intel account to order the updated boards (*product code BKO2HE*). Channel members can order a maximum of five boards per request. When requesting warranty replacements, please reference this *Technical Advisory TA0414*.

What should Intel OEM customers do?

OEM customers should contact their Intel sales representative to coordinate the logistics of receiving updated SKA4 baseboards. OEM customers can order the number of SKA4 baseboards (*product code BKO2HE*) that can be updated and returned to Intel within four weeks. When requesting warranty replacements, please reference this *TA-0414*.

What should other customers or owners of SKA4 based systems do?

Please contact the original supplier of information and updates.

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Questions and Answers:

Num	Question	Answer
1.	How does updating the system baseboard affect the SKA4 system warranty?	Intel provides a three-year limited warranty with the SKA4 based systems from the date of original purchase. Intel's warranty covers repair, refund, or replacement at Intel's discretion. After updating the baseboard, all systems retain the balance of their original warranty time period.
2.	If my warranty has expired, can I still take advantage of this update?	Because Intel covers product for three years from date of purchase, there are no systems that have exceeded their warranty time period. If you are concerned with this issue, please have your system updated before the warranty expires.
3.	If a customer has an SKA4 baseboard in their system and does not have an issue with it, are they required to remove it and sent it in for an update?	System owners are not required to send in their SKA4 baseboards for an update if they are not concerned with the description of the issue in this technical advisory. The SKA4 baseboard will remain covered under Intel's standard three-year limited warranty.
4.	I am a Channel customer and have SKA4 based systems that have not been installed. What should I do?	Please follow the instructions and procedures in this TA to have your SKA4 baseboard updated. These systems are treated the same as installed systems and are covered under Intel's warranty.
5.	Who installs the updated baseboard and configures the system?	It is up to the system owner and the system integrator to determine how the updated board will be installed.
6.	Will onsite service be provided for SKA4 replacements?	It is up to the system integrator to determine whether or not they will provide onsite service.
7.	I am a direct OEM/Channel customer and cannot manage a board level update strategy for my installed base, what do I do?	Updating the installed base at the board level (versus a system level) is judged to be the most expeditious way to address the issue. Customers who cannot arrange for a board update should work with Intel field geographies and factory representatives for appropriate solutions.
8.	I recently ordered and received a replacement SKA4 baseboard through the warranty process. How do I know if this update has been applied to the warranty replacement board that I received?	Please refer to the information in this TA on how to identify an updated SKA4 baseboard. If the baseboard in question has not been updated, it should be returned to Intel for updating through the standard warranty process.
9.	I have customized my CMOS configuration on my present system and I am concerned about losing it. What should I do?	Before starting the update process boot the system from the <i>System Resource CD</i> and run SSU. Save the current system configuration to diskette. After updating the baseboard the system configuration can be restored using SSU.
10.	When does this program end?	This program ends per the communication on 8/30/2002. After this date the boards identified in this TA will not be exchanged as outlined above.

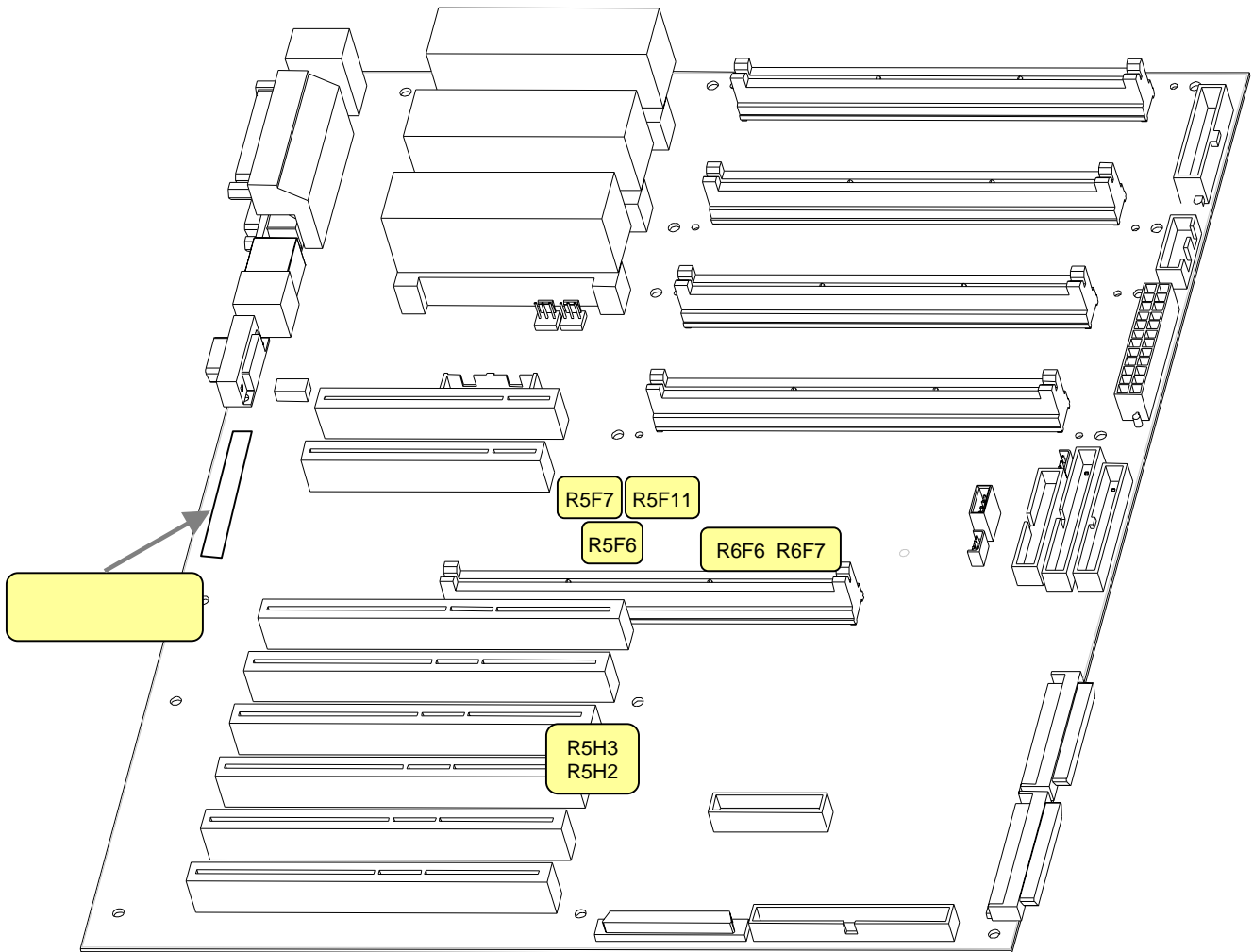
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SKA4 Baseboard Resistor and Label Locations.



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

Enterprise Platforms & Services Division
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