

# intel® Technical Advisory

TA-0674-5

5200 NE Elam Young Parkway  
Hillsboro, OR 97124

February 20, 2004

## Intel® Server Chassis SR2300 500W Power Supply Failure Rate Above Average

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### Products Affected

Product	Product Codes
Intel® Server Chassis SR2300	KSW
	SE7501WV2SKU02
	SW2USKU07
	KSWNA
	SE7501WV2S02NA
500W PSU ACCESSORY	AXX2PSMODL500

### Description

Intel® Server Chassis SR2300 500-watt redundant power (RP) supply modules with Intel part number A76009-006 and prior revisions have the potential to fail during sustained, powered-on operation due to a failure of the primary PFC diode (D802) in the power supply module. If a diode failure occurs, systems operating in a non-redundant power supply configuration (only one power supply module installed in the power supply cage) will experience an immediate system power down. Systems operating in a redundant power supply configuration will continue normal operation, and the power supply module failure will be indicated by the power supply and system front panel status LEDs, and Intel® Server Management software.

Intel has recorded a higher than expected defect per million (DPM) rate for the Intel Server Chassis SR2300 power supply modules with Intel part number A76009-006 and prior revisions. Under certain conditions, the DPM rate may exceed Intel's requirement for server system power supplies.

This issue was first discovered by Intel in October 2003, and was communicated to Intel's customer base in previous revisions of this Technical Advisory. In October 2003, Intel worked with the current supplier for the primary PFC diode supplier to implement a diode screening process to prevent this issue from occurring in the future. However, recently reported field failures from several customers involving replacement power supply modules built with screened diodes, and Intel's on-going monitoring of quality, prompted Intel to reopen the investigation underlying the information in TA 674-3.

### Root Cause

Inherent imperfections in the silicon carbide base material (substrate) used to fabricate the diode cause abnormal electric fields within the diode package during normal operating conditions. These fields result in high temperatures in the imperfection areas which cause degradation and eventual failure of the diode. The structural design of the current supplier's diode does not have designed-in protection from these abnormal electric fields.

### Corrective Action / Resolution

Intel has identified an alternate supplier source for the primary PFC diode in the power supply module. The alternate diode design is substantially less susceptible to substrate imperfections, because it has designed-in protection against

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substrate imperfections, and is therefore more robust than the current diode design. Intel has determined that power supply modules built with the alternate diode meet Intel's DPM rate requirement for server system power supplies. The alternate diode is an equivalent drop-in replacement. An Engineering Change Order (ECO) has been completed to incorporate the alternate diode. This change is described in Product Change Notification (PCN) number 103919-00.

Power supply modules built with the alternate diode will be marked with Intel part number A76009-007 (or later revisions). Power supply modules with Intel part number A76009-006 and prior revisions may be reworked with the alternate diode by Intel's factories to part number A76009-007. Reworked power supplies will be marked with a green sticker and relabeled with part number A76009-007 (or later revisions). Power supply modules with the alternate diode will begin shipment from the power supply supplier on February 19, 2004. All affected product codes built after February 19, 2004 will contain power supply modules built with the alternate diode.

Customers who experience power supply module failures may obtain replacement power supply modules through Intel's normal warranty process. To obtain replacement power supply modules, contact Intel using your normal warranty process. Please indicate that you are calling regarding TA 674-X and have the part number and the serial numbers for the systems needing the replacement part.

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