# Technical Advisory

TA-749-2

*This Technical Advisory describes an issue that may or may not affect the customer's product*

5200 NE Elam Young Parkway
Hillsboro, OR 97124

March 17, 2006

## Installation of 4 pin processor fan heatsink connector on Intel® Server Boards SE7320SP2 and SE7525GP2 that have 3 pin fan headers

*Information in this document is provided in connection with Intel products. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Intel's Terms and Conditions of Sale for such products, Intel assumes no liability whatsoever, and Intel disclaims any express or implied warranty, relating to sale and/or use of Intel products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright or other intellectual property right. Intel products are not intended for use in medical, life saving, or life sustaining applications. Intel may make changes to specifications and product descriptions at any time, without notice. The **Intel® Server Board SE7320SP2 / Intel® Server Board SE7525GP2** may contain design defects or errors known as errata which may cause the product to deviate from published specifications. Current characterized errata are available on request.*

**Products Affected**

| Product Code | MM # | Description |
|---|---|---|
| SE7320SP2 | 867716 | Boxed single pack board |
| SE7525GP2 | 867657 | Boxed single pack board |
| BSPE7320 | 874690 | OEM 10-pack board |
| BGPE7525 | 874702 | OEM 10-pack board |

**Description**
The 64-bit Intel® Xeon® processor with an 800-MHz system bus and 2 MB of L2 cache is shipping with a new heatsink fan that has a 4-pin connector (see figure 1 below). Processor heatsink fans are included only on the active boxed processor SKUs, passive boxed processor SKUs will continue to ship a heatsink with no fan. When integrating the Intel® Server® Board SE7320SP2 or SE7525GP2 into the Intel® Server Chassis SC5300, the passive version (no fan) of the Intel® Xeon® processor must be used. For integration into the Intel® Entry Server Chassis SC5275-E or instances where the server board is integrated into third-party chassis, the active heatsink solution may be required to meet the processor cooling requirements.
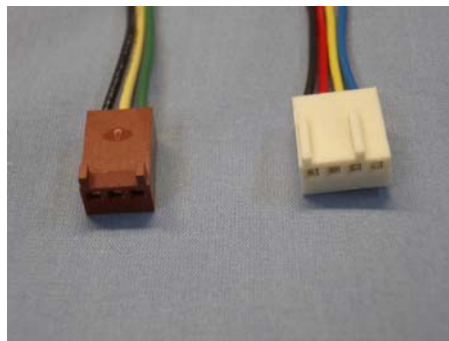


**Figure 1. 3-pin and 4-pin heatsink fan connectors**

# Technical Advisory

TA-749-2

*This Technical Advisory describes an issue that may or may not affect the customer's product*

5200 NE Elam Young Parkway
Hillsboro, OR 97124

March 17, 2006

The four signals routed on the new fan harness include the ground signal, fan power signal, fan tachometer signal, and fan pulse width modulation (PWM) signal. The PWM signal is a new signal that has been added to control the fan speed for improved acoustics, based on the processor thermal requirements.

The Intel® Server® Boards SE7320SP2 and SE7525GP2 support both the active and passive processor SKUs. The active processor heatsink uses 3-pin fan headers on the server board. In addition to continuing to support the 3-pin fan connector, the OEM 10-pack server boards accommodate the new 4-pin connector. For processor 1, this connector is installed onto the 3-pin CPU1 fan header on the server board, with the PWM signal left unconnected. See Figure 2.



**Figure 2: 4-pin fan connector plugged into 3-pin fan header for Processor 1**

For processor 2, the PWM signal plugs into the adjacent 6-pin fan header. The pin the PWM signal plugs into is not connected on the server board, so this configuration will not damage the heatsink fan.
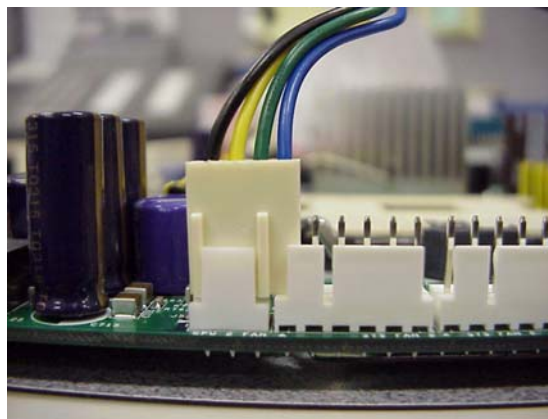


**Figure 3: 4-pin fan connector plugged into 3-pin fan header and adjacent 6-pin fan header for Processor 2**

# Technical Advisory

*This Technical Advisory describes an issue that may or may not affect the customer's product*

5200 NE Elam Young Parkway
Hillsboro, OR  97124

March 17, 2006

Both of these implementations leave the PWM signal unconnected and will result in the processor heatsink fan running at full speed at all times. No adverse effects are expected on the performance of the processor or the server board.

Both of the boxed single pack server boards include a pair of fan adapter cables (part number D19125-00x) to accommodate the 4-pin processor fan heatsink connector. See the attention document that is included with the boxed board for installation instructions.

**Root Cause**
The Intel® Server Boards SE7320SP2 and SE7525GP2 were designed for the Intel® Xeon® processor with an 800-MHz system bus and 1 MB L2 cache. The active boxed SKU of this processor included a 3-pin fan connector. To support the latest technology, Intel added BIOS support on these server boards for the new Intel® Xeon® processor that ships with the 4-pin fan connector. The processor fan header hardware was not modified.

**Corrective Action / Resolution**
Intel does not plan to modify the Intel® Server Boards SE7320SP2 or SE7525GP2 to support the PWM signal of the 4-pin heatsink fan connector of this new processor.

To install the 4-pin heatsink fan connectors onto the OEM 10-pack board's 3-pin processor fan headers, install the fan harness such that the pins 1-3 are inserted onto the header and pin 4 (PWM signal – blue wire) extends from the edge of the fan header or connects to the adjacent 6 pin fan header as described in this document.

To install the 4-pin heatsink fan connectors onto the boxed single pack server board's 3-pin processor fan headers, please use the fan adapter cables (part number D19125-00x) in terms of the attention document that is included with the boxed board.

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

Enterprise Platforms & Services Division
Intel Corporation