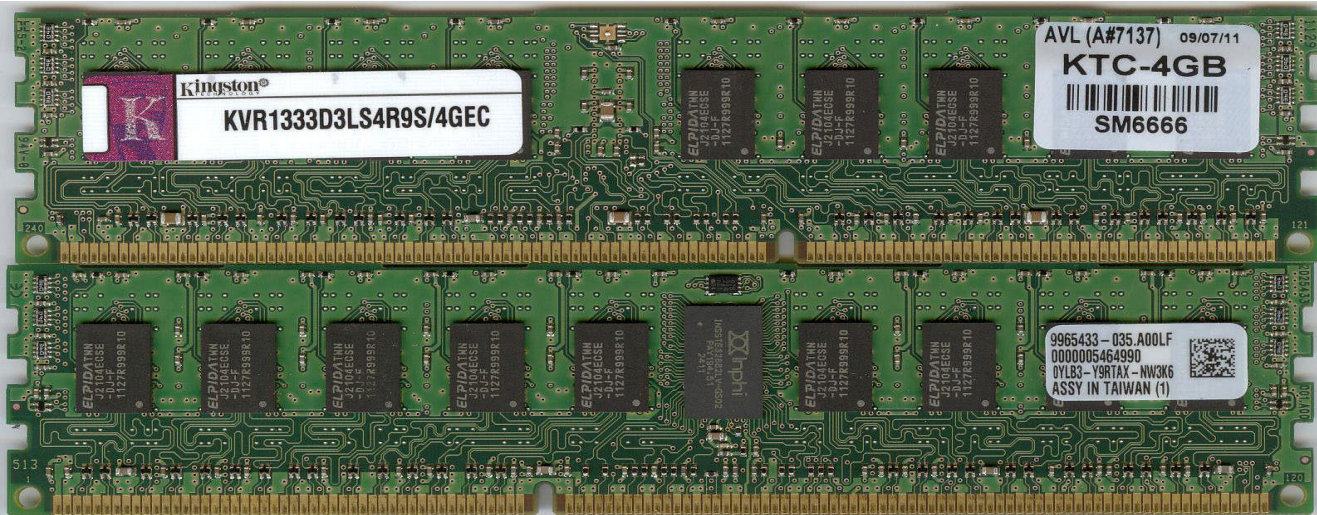



|   |  |              |             |
|---|--|--------------|-------------|
|  | <b>AVL Supermicro server platform Memory Module Qualification Test</b> |              |             |
|   | Intel X5650(WSM) x 2, Intel 5520 (Tylersburg), Rev C2                  | Test Results | <b>Pass</b> |
|   | PN: KVR1333D3LS4R9S/4GEC (4GB / RDIMM / ECC ) On: X8DTU Rev.2.01       |              |             |

| RP77D3x-106-KI-SQ-SMC-V1                               |                              | Module Information |             | Rev 01/07/2011 |
|--|------------------------------|--------------------|-------------|----------------|
| AVL WorkOrder #  | WC1752                       | AVL A#             | 7137        |                |
| Start Date   | 10/19/2011                   | End Date           | 10/24/2011  |                |
| Tested By  | Andy C.                      |                    |             |                |
| Module Manufacturer                                    | Kingston                     |                    |             |                |
| Module Part Number                                     | KVR1333D3LS4R9S/4GEC         |                    |             |                |
| Module BOM Number                                      | 9965433-035.A00LF            |                    |             |                |
| Module Capacity / Memory Type / ECC                    | 4GB / RDIMM / ECC            |                    |             |                |
| Module Configuration (Width, # of devices, # of Ranks) | 512Mx72 /18 Devices / 1 Rank |                    |             |                |
| Speed Tested (Data rate of Mbps, CL-tRP-tRCD)          | DDR3L-1333 /9-9-9            |                    |             |                |
| DRAM Device Vendor                                     | Elpida                       |                    |             |                |
| DRAM Device Part Number / Date code                    | EDJ2104ECSE-DJ-F             | 1127               |             |                |
| DRAM Die Revision / Process Technology ( nm )          |                              |                    |             |                |
| DRAM Device Config (Density / Width)                   | 2Gbit                        | / x4               | / 512Mx4bit |                |
| Thermal Sensor Device Vendor / Part Number / Revision  |                              |                    |             |                |
| Register Device Vendor / Part Number / Revision        | Inphi                        | INSSTE32882        | LV-GS02     |                |



| Platform System Information                                |                                 |          |            |        |
|--|---------------------------------|----------|------------|--------|
| Motherboard Info (Model# & MB Revision & MB S/N & AVL S/N) | X8DTU                           | 2.01     | VM06SG3312 | SK4374 |
| BISO Revision / BIOS Date / MRC Rev.                       | 2.0c                            | 1/5/2011 | 2.21       |        |
| CPU / Speed  | Intel X5650(WSM) x 2            |          | 2.66GHz    |        |
| Chipset info (Stepping)                                    | Intel 5520 (Tylersburg), Rev C2 |          |            |        |

|   |   |
|---|---|
|  | <b>AVL Supermicro server platform Memory Module Qualification Test</b>  |
|   | <b>Intel X5650(WSM) x 2, Intel 5520 (Tylersburg), Rev C2</b><br><b>PN: KVR1333D3LS4R9S/4GEC (4GB / RDIMM / ECC ) On: X8DTU Rev.2.01</b> |

|                      |             |
|----------------------|-------------|
| <b>Test Results:</b> | <b>PASS</b> |
| <i>Comments:</i>     |             |

### AVL Memory Module Qual Test Results Summary

| Test # and name                                   | Test Description  | Specs                                 | Test        | Comments                                     |
|---|---|---------------------------------------|-------------|--|
|   |   |                                       | Results     |  |
| <b>1. Latest BIOS Upgrade &amp; Configuration</b> | Download / Upgrade latest BIOS & record size and speed detection                          | Per test platform, DIMM & config spec | <b>Done</b> | Record memory size & speed at each test only |
| <b>2. SPD Check</b>                               | Memory module SPD content check for JEDEC compliance                                      | JEDEC                                 | <b>Pass</b> | Use proprietary tools                        |
| <b>3. Sisoftware Sandra Benchmark</b>             | Run Windows based diags & utility software @55°C - DIMM max loading. Test run under 1.35v | 1 loop per config                     | <b>Done</b> | Force 1066 in BIOS                           |
| <b>4. Passmark Burn-In</b>                        |   | 12 Hour per config                    | <b>Pass</b> | Force 1066 in BIOS                           |
| <b>5a. Stress Application Test</b>                | Run Linux based diags & utility software @55°C - DIMM max loading. Test run under 1.35v   | 12 Hour per config                    | <b>Pass</b> | Force 1066 in BIOS                           |
| <b>5b. Stream Benchmark Test</b>                  |   | 5 loop per config                     | <b>Done</b> | Force 1066 in BIOS                           |
| <b>5c. Reset Cycle</b>                            |   | 500 loop per config                   | <b>Pass</b> | Force 1066 in BIOS                           |
| <b>6. Functional Stress Test (Corner 1)</b>       | Run RST Premium @55°C - 1 DIMM Per Ch<br>Test run under 1.35v 1333                        | 8 Hour or 2+ Loops per config         | <b>N/A</b>  | Run @ Max module speed                       |
| <b>7. Functional Stress Test (Corner 2)</b>       | Run RST Premium @55°C - 2 DIMM Per Ch<br>Test run under 1.5v                              | 8 Hour or 2+ Loops per config         | <b>Pass</b> | Full Load                                    |
| <b>8. Functional Stress Test (Corner 3)</b>       | Run RST Premium @0°C 1 DIMM Per Ch<br>Test run under 1.35v 1333                           | 8 Hour or 2+ Loops per config         | <b>N/A</b>  | Run @ Max module speed                       |

Note: All test under IMC Vdd=Nom, Vref=Vddnom/2