
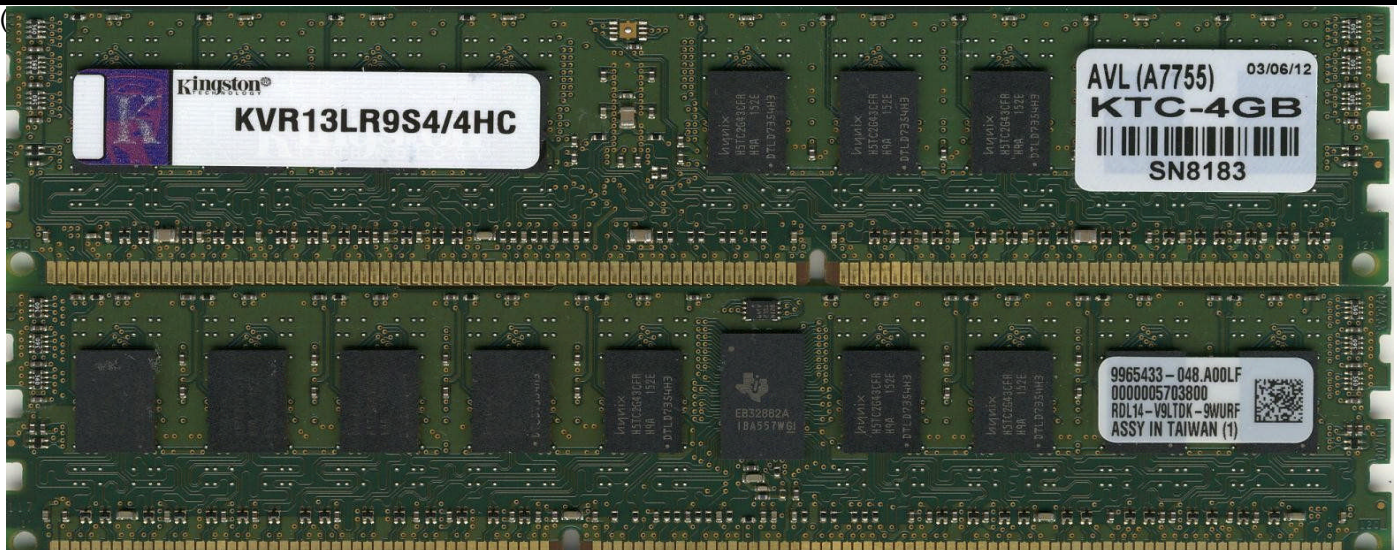


| | | | |
|-----------------------------------------------------------------------------------|------------------------------------------------------------------------|--------------|-------------|
|  | AVL Supermicro server platform Memory Module Qualification Test | | |
| | Intel X5650(WSM) x 2, Intel 5520 (Tylersburg), Rev C2 | Test Results | Pass |
| | PN: KVR13LR9S4/4HC (4GB / RDIMM / ECC) On: X8DTU-F Rev.2.01 | | |

| RP77D3x-106-KI-SQ-SMC-V1 | | Module Information | | Rev 01/07/2011 |
|--------------------------------------------------------|------------------------------|--------------------|-------------|----------------|
| AVL WorkOrder # | WC3164 | AVL A# | 7755 | |
| Start Date | 4/9/2012 | End Date | 4/16/2012 | |
| Tested By | Van N. | | | |
| Module Manufacturer | Kingston | | | |
| Module Part Number | KVR13LR9S4/4HC | | | |
| Module BOM Number | 9965433-048.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 | Hynix | | | |
| DRAM Device Part Number / Date code | H5TC2G4CFR-H9A | | | 1152 |
| DRAM Die Revision / Process Technology (nm) | | | | |
| DRAM Device Config (Density / Width) | 2Gbit / x4 | | / 512Mx4bit | |
| Thermal Sensor Device Vendor / Part Number / Revision | STMicro | | | |
| Register Device Vendor / Part Number / Revision | TI | EB32882A | V 5.0 | |



| Platform System Information | | | | |
|------------------------------------------------------------|---------------------------------|------------|------------|--------|
| Motherboard Info (Model# & MB Revision & MB S/N & AVL S/N) | X8DTU-F | 2.01 | VM1AS51160 | SM9021 |
| BISO Revision / BIOS Date / MRC Rev. | 2.1b | 12/30/2011 | 2.3 | |
| CPU / Speed | Intel X5650(WSM) x 2 | | 2.66GHz | |
| Chipset info (Stepping) | Intel 5520 (Tylersburg), Rev C2 | | | |



AVL Supermicro server platform Memory Module Qualification Test

Intel X5650(WSM) x 2, Intel 5520 (Tylersburg), Rev C2

PN: KVR13LR9S4/4HC (4GB / RDIMM / ECC) On: X8DTU-F Rev.2.01

Test Results:

PASS

Comments:

AVL Memory Module Qual Test Results Summary

| Test # and name | Test Description | Specs | Test Results | Comments |
|---------------------------------------------------|-------------------------------------------------------------------------------------------|---------------------------------------|--------------|----------------------------------------------|
| | | | | |
| 1. Latest BIOS Upgrade & Configuration | Download / Upgrade latest BIOS & record size and speed detection | Per test platform, DIMM & config spec | Done | Record memory size & speed at each test only |
| 2. SPD Check | Memory module SPD content check for JEDEC compliance | JEDEC | Pass | Use proprietary tools |
| 3. Sisoftware Sandra Benchmark | Run Windows based diags & utility software @50°C - DIMM max loading. Test run under 1.35v | 1 loop per config | Done | Force 1066 in BIOS |
| 4. Passmark Burn-In | | 6 Hour per config | Pass | Force 1066 in BIOS |
| 5a. Stress Application Test | Run Linux based diags & utility software @50°C - DIMM max loading. Test run under 1.35v | 8 Hour per config | Pass | Force 1066 in BIOS |
| 5b. Stream Benchmark Test | | 5 loop per config | Done | Force 1066 in BIOS |
| 5c. Reset Cycle | | 500 loop per config | Pass | Force 1066 in BIOS |
| 6. Functional Stress Test (Corner 1) | Run RST Premium @50°C - 1 DIMM Per Ch Test run under 1.35v 1333 | 8 Hour or 2+ Loops per config | N/A | Run @ Max module speed |
| 7. Functional Stress Test (Corner 2) | Run RST Premium @50°C - 2 DIMM Per Ch Test run under 1.5v | 8 Hour or 2+ Loops per config | Pass | Full Load |
| 8. Functional Stress Test (Corner 3) | Run RST Premium @0°C1 DIMM Per Ch Test run under 1.35v 1333 | 8 Hour or 2+ Loops per config | N/A | Run @ Max module speed |

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