AVL Supermicro server platform Memory Module Qualification Test

Intel E5-2650(SNB-EP) x 2, Intel C602	Test Results	Pass

PN: KVR13LR9D4/16HM (16GB / RDIMM / ECC) On: X9DRL-iF Rev.0

RP77D3x-106-KI-SQ-SMC-V1	Module Information		Rev 01/07/2011
AVL WorkOrder #	WC3434	AVL A#	7870
Start Date	4/26/2012	End Date	4/28/2012
Tested By		Van N.	
Module Manufacturer		Kingston	
Module Part Number		KVR13LR9D4/16HM	
Module BOM Number		9965516-C08.A00LF	
Module Capacity / Memory Type / ECC		16GB / RDIMM / ECC	
Module Configuration (Width, # of devices, # of Ranks)		2Gx72 /36 Devices / 2 Ranks	
Speed Tested (Data rate of Mbps, CL-tRP-tRCD)		DDR3L-1333	
DRAM Device Vendor		Hynix	
DRAM Device Part Number / Date code		H5TC4G43MFR-H9A 1209	
DRAM Die Revision / Process Technology (nm)		M	
DRAM Device Config (Density / Width)		4Gbit / x4 1024Mx4bit/	
Thermal Sensor Device Vendor / Part Number / Revision		IDT	
Register Device Vendor / Part Number / Revision		Inphi INSSTE32882UV-GS02 UV-GS02	
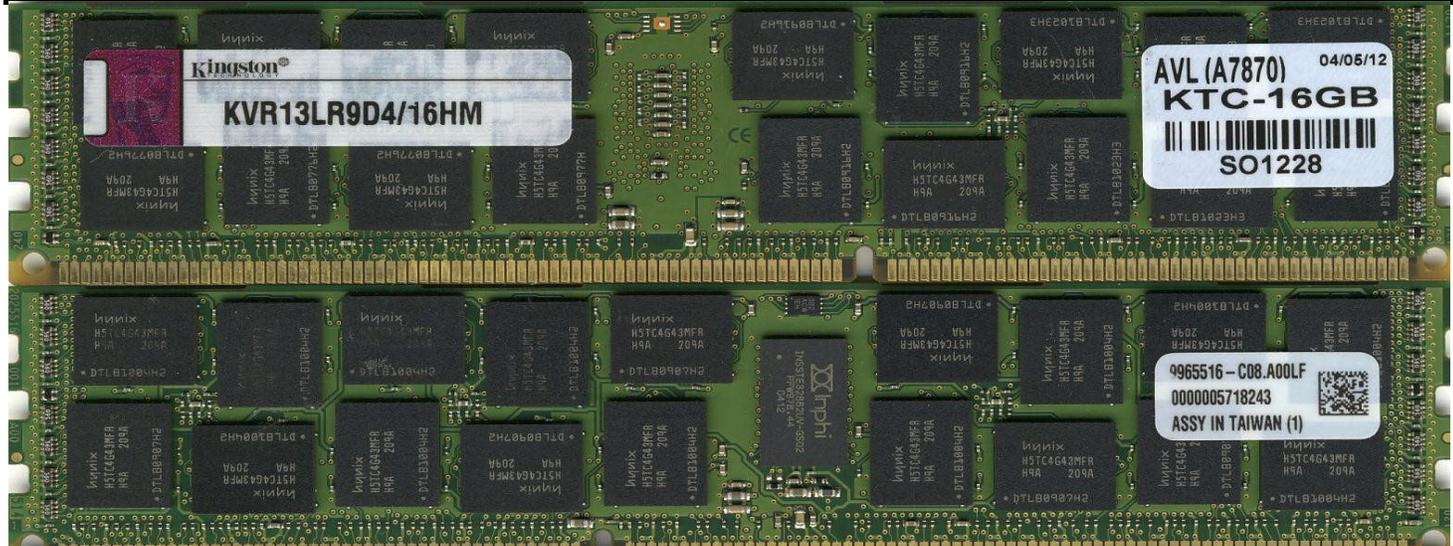
Platform System Information			
Motherboard Info (Model# & MB Revision & MB S/N & AVL S/N)	X9DRL-iF	0	0	SN1029
BIOS Revision / BIOS Date	1	2/21/2012	
CPU / Speed	Intel E5-2650(SNB-EP) x 2	2.0GHz	
Chipset info (Stepping)	Intel C602		

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![AVL Logo] ADVANCED VALIDATION LABS, INC.	**AVL Supermicro server platform Memory Module Qualification Test**
	Intel E5-2650(SNB-EP) x 2, Intel C602
	PN: KVR13LR9D4/16HM (16GB / RDIMM / ECC) On: X9DRL-iF Rev.0

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		**Done**	
2. SPD Check	Memory module SPD content check for JEDEC compliance	JEDEC	**Pass**	Use proprietary tools
3. Reset Cycle	Run Linux based diags & utility software @ 50°C	50 loops	**N/A**	1 DIMM Per Channel when applicable
4a. Stress Application Test	Run Linux based diags & utility software @50°C	8 Hour per config	**Pass**	DIMM Loading per spec
4b. Stream Benchmark Test		5 loop per config	**Pass**	DIMM Loading per spec
4b. Reset Cycle		200 loop per config	**Pass**	DIMM Loading per spec
5. Functional Stress Test	Memory Stress Test @50°C -	12hrs	**Pass**	DIMM Loading per spec
6. Stress Application Test	Run Linux based diags & utility software @50°C	6hrs	**N/A**	3 DIMM Per Channel when applicable

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