Intel® Server RAID Controller SRCU32
Memory List Test Report Summary

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Revision History		
Date	**Rev**	**Modifications**
Dec/01	.05	Initial pre-launch release.
Jan/02	1.0	Released. Added Dataram 128MB part, Added PNY & Simple Technology 256MB parts, Added Unigen, Hyundai & Centon 64MB parts.
Feb/02	2.0	Added Avant 64MB & 128MB parts (In shaded area).
Mar/02	3.0	Added Unigen, Centon & Micron 64MB parts. Added Avant & Virtium 128MB parts. Added Unigen, Avant, Ventura, Hyundai, PNY & MSC 256MB parts (In shaded area).
April/02	4.0	Added Ramax 32MB parts. Added Avant, Ramax, Transend & Unigen 64MB parts. Added Hyundai, MSC, Transend, & Unigen 128MB parts. Added Unigen 256MB parts (In shaded area).
June/02	5.0	Added Samsung 256MB part. (In shaded area).
Aug/02	6.0	Added Samsung 256MB part. (In shaded area).

Please Note: *DIMM devices with gold contacts should NOT be placed into DIMM sockets with tin-lead contacts or vice-versa. Mixing dissimilar metal contact types has been shown to result in unreliable memory operation. Intel recommends similar manufacturer and similar speeds in each bank on the memory module. Mixing of dissimilar memory manufacturer and similar speeds in each bank on the memory module is NOT recommended*

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Overview of Memory Testing

The following procedure is used to qualify Dual In-Line Memory Modules (DIMMs) for use with the Intel® Server RAID Controller.   Memory is a vital subsystem in a server. Intel requires strict guidelines to be met before a DIMM vendor is put onto the qualified memory list. To be acknowledged on the list as a fully functional DIMM, the memory must undergo rigorous tests to ensure that the product will perform the intended Server and Workstation product functions.

Memory qualification for Intel®'s Server and Workstation Board products is performed by Intel's Memory Validation Laboratory (MVL), and by an independent external test laboratory, Computer Memory Test Lab (+CMTLsm).

Intel®'s Server Board, Workstation Board and RAID Controller products qualified memory lists categorize memory modules as Advanced Tested. The Advanced Testing process involves a paper qualification, a standard voltage and room temperature functional test, and a voltage and temperature margin functional test. A paper qualification is a review of critical timings, electrical characteristics, timing requirements, environmental requirements, and packaging requirements in order to see if the DIMM meets Intel's memory specifications. The standard voltage and room temperature test involves testing the memory module on the particular Intel Board for which it is being qualified with test software operating under Microsoft* Windows for no less than 24 hours. The voltage and temperature margin testing involves testing the memory module on the particular Intel product for which it is being qualified with various test software and operating systems for 24 hours under various voltage and temperature margin conditions. DIMMs that have completed Advanced Testing are known to be compatible with the product on which they were tested, and with the test software and operating system that was utilized during the test procedure.

+CMTLsm is a leading memory testing organization responsible for testing a broad range of memory products. A memory product, which receives a "PASS" after being tested by CMTLsm, means it functions correctly and consumers can use the product to perform the intended server functions. In order to pass these stringent standards, memory products must maintain the highest manufacturing procedures and pass an exacting battery of tests. Testing is performed with equipment and a procedure as defined by Intel's various functional testing levels. Testing is performed on a number of Intel® Server RAID Controllers.

John Deters
714-960-1243 (voice)
714-960-4695 (fax)

CMTLsm
(Computer Memory Test Lab)
101 Main Street, Suite 2G
Huntington Beach, CA 92648
http://www.cmtlabs.com

Qualified SDRAM DIMM Memory for the Server RAID Controller U3-2(SRCU32)

The Intel® Server RAID Controller SRCU32 is an Ultra160, two channel controller that supports RAID levels 0,1,4,5, and 10. By off loading RAID interrupts and parity calculations to an onboard dedicated Intel ® 80303 intelligent I/O processor, the controller provides data protection while helping to optimize server CPU performance.
Key features:
- Designed and validated with Intel Server Boards and Platforms
- Support for RAID Levels 0, 1, 4, 5 and 10
- Intel® 80303 Intelligent I/O processor
- Affordable data protection

Three year limited warranty

The controller utilizes both PC100 & PC133 SDRAM module for caching and is compatible with memory modules meeting the following specifications:
- 168-pin gold-plated SDRAM DIMMs
- Unbuffered 100MHz & 133MHz SDRAM ECC
- 64MB, 128MB & 256MB capacities
- 3.3v memory only
- Single or double row DIMMs

Memory features are detailed in the *SRCU32 Server RAID Controller Technical Product Specification* available on-line at http://support.intel.com/support/motherboards/server/srcu32/

The following tables list DIMM devices tested to be compatible with the Intel® Server RAID Controller. This document and the DIMM list will be updated as qualified memory is added during the life of the Intel® Server RAID Controller product.

Intel strongly recommends the use of ECC memory in all server products.

Memory modules not listed in the following tables have not been tested for compatibility and their use with the SRCU32 may result in unpredictable operation and data loss.

Caution: Third party memory vendors may use the same module part number with different DRAM vendors and die revisions. To insure proper system operation, verify that each DRAM vendor and die revision has been separately tested and qualified. Please notify CMTL^{SM} if there is a discrepancy. This list is subject to change without notice.

Note: This list is not intended be all-inclusive. It is provided as a convenience to Intel's general customer base, but Intel does not make any representations or warranties whatsoever regarding the quality, reliability, functionality, or compatibility of these memory modules.

Server RAID Controller SRCU32

Unbuffered, ECC, 100MHz SDRAM DIMM Modules
32MB Sizes (4Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	EOL

Unbuffered, ECC, 133MHz SDRAM DIMM Modules
32MB Sizes (4Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	EOL
Ramax	RMB111H16B2T-7	HY57V641620HGT-H rev H	Hyundai	RPB164216I61 rev 1	3/22/02	H136	3	

Server RAID Controller SRCU32

Unbuffered, ECC, 100MHz SDRAM DIMM Modules
64MB Sizes (8Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	EOL
Unigen	UG58S7448HC-PH	M2V64S30DTP-6L rev D	Mitsubishi	INTEL8X8 rev 1	12/21/01	F487	2	
Unigen	UG58S7448HC-PH	M2V64S30DTP-6L rev D	Mitsubishi	INTEL8X8 rev 1	3/4/02	H825	2	

Unbuffered, ECC, 133MHz SDRAM DIMM Modules
64MB Sizes (8Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	EOL
Centon Electronics	CVFKJCTV4VU375J	V54C365804VCT-7 rev C	Mosel-Vitelic	CPCB-00375-G rev D	12/28/01	F436	2	
Centon Electronics	UG58T7446JC-PL	UPD45128163G5-A75	NEC	INTELX16	12/24/01	F489	3	
Hyundai Electronics America	HYM76V8735HGT8-K	HY57V64820HGT-K rev C	Hyundai	HYM76V8735HGT8-K	12/21/01	F790	2	
Avant Technology	AVE7208U31A2133E3-A	MT48LC8M8A2-7E rev C	Micron	50-1232-01-A rev A	2/10/02	H142	2	
Centon Electronics	CVFKJCTV4VU375J	V54C365804VCT-7 rev C	Mosel-Vitelic	CPCB-00375-G rev D	3/6/02	H822	2	
Micron	MT5LSDT872AG-133F1	48LC8M16A2-75 rev F	Micron	0134 rev B	3/7/02	H200	3	
Avant Technology	AVE7208U31A2133E3-A	MT48LC8M8A2-7E rev C	Micron	50-1232-01-A rev A	3/15/02	H834	2	
Ramax	RMB111S26B3T-7	HYB39S128160CT-7.5 rev C	Infineon	RPB164216I61 rev 1	3/26/02	H138	3	
Transcend Information, Inc	TS16MLS72V6W	K4S640832D-TC75 rev D	Samsung	09-7140	3/19/02	H918	3	
Unigen	UG58T7446JC-PL	UPD45128163G5-A75	NEC	INTELX16	3/15/02	H826	3	

Server RAID Controller SRCU32

Unbuffered, ECC, 100MHz SDRAM DIMM Modules
128MB Sizes (16Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	EOL

Unbuffered, ECC, 133MHz SDRAM DIMM Modules
128MB Sizes (16Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	EOL
Virtium Technology Inc	VM374S1723-GA	K4S280832D-TC75 rev D	Samsung	168-167203	12/6/01	G057	3	
Hyundai Electronics America	HYM76V16735HGT8-K	HY5764820HGT-K rev C	Hyundai	HYM76V167 35HGT8-K	12/7/01	F792	2	
Unigen	UG532T7448JJ-PL	UPD45128841G5-A75	NEC	SOCKEYE	12/11/01	F492	3	
Unigen	UG516T7448JJ-PL	UPD45128841G5-A75	NEC	SOCKEYE	12/10/01	F491	3	
Unigen	UG516T7446JC-PL	UPD45128163G5-A75	NEC	INTELX16	12/10/01	F490	3	
Centon Electronics	CVGKJCTV4VU375J	V54C365804VCT-7 rev C	Mosel-Vitelic	CPCB-00375-G rev D	12/6/01	F438	2	
Simple Tech	ST72U8E16-A75A	MT48LC16M8A2-75 rev E	Micron	880	12/5/01	F368	3	
Dataram	DTM60140 (68019Z) (Y)	HY57V28820HCT-H rev A	Hyundai	650769-G rev 1	12/26/01	F284	3	
Avant Technology	AVE7216U36A2133E3-A	MT48LC16M8A2TG-7E rev E	Micron	50-1232-01-A rev A	2/15/02	H147	2	
Avant Technology	AVE7216U36A2133E3-A	MT48LC16M8A2TG-7E rev E	Micron	50-1232-01-A rev A	3/1/02	H835	2	
Virtium Technology Inc	VM374S1723-GA	K4S280832D-TC75 rev D	Samsung	168-167203	3/11/02	H833	3	
Hyundai Electronics America	HYM76V16735HGT8-K	HY5764820HGT-K rev C	Hyundai	HYM76V167 35HGT8-K	3/14/02	H831	2	
MSC Vertriebs GmbH	MSC872V16A3DT4ESG-75AI SI	HYB39S128800CT-7.5 rev C	Infineon	PCB872V64 003EDTBG0 -H	3/25/02	H117	3	
Transcend Information, Inc	TS16MLS72V6W	48LC8M8A2 TG-75 rev C	Micron	PPMD1289A	3/19/02	H917	3	
Unigen	UG516T7448JJ-PL	UPD45128841G5-A75	NEC	SOCKEYE	3/13/02	H828	3	

Server RAID Controller SRCU32

Unbuffered, ECC, 100MHz SDRAM DIMM Modules
256 MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	EOL

Unbuffered, ECC, 133MHz SDRAM DIMM Modules
256MB Sizes (32Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CAS Latency	EOL
Hyundai Electronics America	HYM71V32735HCT8-K	HY57V28820HCT-K rev C	Hyundai	HYM71V32735HCT8-K	12/7/01	F793	2	
PNY	7232ZHSEM4G19TWN-PH0	HYB39S128800CT-7.5 rev C	Infineon	40000387 rev A	12/26/01	F367	3	
Simple Technology	ST72U8E32-A75A	MT48LC16M8A2-75 rev E	Micron	880	12/24/01	F480	3	
Unigen	UG532T7448JJ-PL	UPD45128841G5-A75	NEC	SOCKEYE	12/11/01	F492	3	
Avant Technology	AVE7232U36A2133E3-A	MT48LC16M8A2TG-7E rev E	Micron	50-1232-01-A rev A	3/5/02	H149	2	
Ventura Technology Group	S26LSJ20MV	MT48LC16M8A2-TG-75B	Micron	V201	3/9/02	H815		
Hyundai Electronics America	HYM71V32735HCT8-K	HY57V28820HCT-K rev C	Hyundai	HYM71V32735HCT8-K	3/9/02	H832	2	
PNY	7232ZHSEM4G19TWN-PH0	HYB39S128800CT-7.5 rev C	Infineon	40000387 rev A	3/12/02	H820	3	
MSC Vertriebs GmbH	MSC872V32AD3DT4EDG-75AI SI	HYB39S128800CT-7.5 rev C	Infineon	PCB872V64003EDTBG0-H	3/15/02	H134	3	
Unigen	UG532T7448JJ-PL	UPD45128841G5-A75	NEC	SOCKEYE	3/14/02	H829	3	
Samsung	M374S3323DTS-C/L7C		Samsung		5/16/02		2	
Samsung	M374S3253DTS-C7C	K4S560832D-TC7C rev. D	Samsung	374S3253ATS rev. 1	8/1/02		3	

CMTL^{sm} (Computer Memory Test Labs)

CMTL* is a privately owned and operated memory testing organization responsible for testing a broad range of memory products. Memory devices tested by CMTL must undergo a rigorous battery of tests to ensure that the product will perform the intended server functions. Memory capability is a major factor your customers consider. CMTL has the ability to test and certify memory on Intel-based server platforms. The list of memory modules, which have undergone testing through the CMTL facility, should be referenced when considering modules for integration into this Intel server product. Stringent standards with regard to manufacturing procedures and quality must be met to pass the exacting tests required for qualification through the independent testing facility. Testing is performed by CMTL with Intel server products and test procedures defined by Intel's Memory Qualification Lab. Intel routinely audits the CMTL facility to ensure all procedures, process handling, and testing methodologies are met.

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