

Intel[®] SBT2 Server Board Memory List Test Report Summary



*Revision 48.0
July, 2003*

Revision History		
Date	Rev	Modifications
Aug/00	0.5	Initial post-launch release for review.
Aug/00	1.0	Release
Sept/00	2.0	Corrected veibage to read PC133.
Sept/00	3.0	Added DatRam 128MB, 256MB & 512MB parts. Added Corsair 256MB part. (In shaded area).
Sept/00	4.0	Added Viking 512MB & Kingston 256MB parts. (In shaded area).
Oct/00	5.0	Added Infineon & Viking 256MB parts. Added Kingston 512MB part. (In shaded area).
Oct/00	6.0	Added Century Microelectronics Inc 256MB part. (In shaded area).
Oct/00	7.0	Added Century Microelectronics Inc 512MB part. (In shaded area).
Nov/00	8.0	Added Dane-Elec 256MB part. (In shaded area).
Dec/00	9.0	Added Samsung 1G & 128MB low-profile parts. Micron, Hyundai, Dataram & Aved Memory Products 256MB parts. Added Micron 512MB parts. Added Dataram 128MB part. (In shaded area).
Dec/00	10.0	AddedDane-Elec 64MB & 512MB parts. (In shaded area).
Jan/01	11.0	Added Ramtek Inc. & ATP Electronics 1G parts. Added Ramax, Aved Memory Products & ATP Electronics 128MB part. Added Viking 256MB part. (In shaded area).
Jan/01	12.0	Added ATP Electronics 256MB & 512MB parts. Added 'Memory Card Technology, GoldenRAM, Simple Tech, Silicon Tech, Unigen & Aved Memory Products 512MB part. Added Memory Card Technology 128MB part. Added Dataram 1G part.Added 2 nd part number for Viking 256MB parts. (In shaded area).
Feb/01	13.0	Added Dane-Elec 128MB part. Added Simple Tech & Simple Tech 256MB part. Added Dataram 512MB part. (In shaded area).
Mar/01	14.0	Added Aved Memory Products 256MB & 512MB parts. Dataram 512MB & 1G parts. GoldenRAM 265MB part. Dane-Elec 512MB part. Added Samsung 64MB, 128MB, 256MB & 512MB parts. (In shaded area).
April/01	15.0	Added Dane-Elec 256MB part. Added Viking 256MB part. Added Kingston 128MB parts. Added Datram 512MB parts. Added Itaucom 256MB & 128MB parts. Added GolenRAM 128MB part. Added PNY 128MB part. (In shaded area).
April/01	16.0	Added Pacific Force Technology Ltd. 256MB part. (In shaded area).
May/01	17.0	Part number correction on Kingston 512MB part. Added GoldenRAM 64MB part. Added Aved Memory Products, Ramax, PNY & Dataram 256MB parts. Added PNY 512MB part. Added ATP Electronics 1G parts. (In shaded area).
June/01	18.0	Added Centon Electronics 512MB part. Added Dataram 1G part. Added PNY 512MB part. Added Viking 128MB part. Added ATP Electronics 256MB part. (In shaded area).
June/01	19.0	Added ATP Electronics 512MB and 1GB parts. (In shaded area).
July/01	20.0	Added PNY and Micron 128MB, ATP 256MB parts. (In shaded area).
July/01	21.0	Added Simple Tech 512MB, Micron 256MB, PNY 1GB parts. (In shaded area).
Aug/01	22.0	Added Dataram and Aved 128MB, Dataram 256MB. (In shaded area).
Aug/01	23.0	Corrected Itaucome part#s. Added Dataram 128MB and 256MB parts. Added PNY 256MB part. (In shaded area).
Nov/01	24.0	Added Dataram 1GB, 512MB modules, Netlist 1GB, Viking 1GB, ATP 256MB, Aved 256MB parts. Hitachi 128MB part. Micron 128MB & 256MB parts. Samsung 256MB, 512 & 1G parts. Infineon 1G part. (In shaded area)
Dec/01	25.0	Added Legend 1GB part. Infiineon 128MB. Samsung 64MB part. (In shaded area)
Dec/01	26.0	Added Samsung 128MB, Smart 256MB, Legend & Dataram 512MB parts. (In shaded area)
Jan/02	27.0	Added Dataram 256MB parts. (In shaded area)
Jan/02	28.0	Added ATP Electronics 128MB parts, Smart Modular 512MB parts. (In shaded area)
Feb/02	29.0	Added Dataram 512MB parts. Added Legend 256MB parts. Added SMART Modular 256MB & 1GB parts. (In shaded area)
Feb/02	30.0	Added Aved 128MB & 512MB parts. Added ATP 256MB & 512MB parts. Added Dataram 512MB & 1GB parts. (In shaded area)

Continued

Revision History		
Date	Rev	Modifications
Mar/02	31.0	Added Dataram 256MB parts (In shaded area).
April/02	32.0	Added Dane-Elec 256MB parts. Added MSC 512MB parts (In shaded area). Updated some Dataram part numbers (~ noted with this symbol)
April/02	33.0	Added Dane-Elec 512MB parts. Dataram 256MB parts. (In shaded area)
May/02	34.0	Added Dataram 128MB parts. (In shaded area)
May/02	35.0	Added Aved 256MB parts. Added Dataram 1GB parts. (In shaded area)
May/02	36.0	Added MSC and Dataram 256MB parts. (In shaded area)
June/02	37.0	Added Buffalo 512MB parts. (In shaded area)
July/02	38.0	Added Buffalo 256MB parts. Added Dataram 512MB & 1GB parts. (In shaded area)
Aug/02	39.0	Added Smart Modular 512MB parts. (In shaded area)
Aug/02	40.0	Added Legend 256MB parts. Added MSC 256MB & 512MB parts. Added Smart 256MB parts (In shaded area).
Sept/02	41.0	Added MSC 512MB parts. (In shaded area)
Sept/02	42.0	Added Dataram 1GB parts. Added MSC 512MB parts. (In shaded area)
Oct/02	43.0	Added 512MB parts. (In shaded area)
Jan/03	44.0	Added Dataram 1GB parts. (In shaded area)
Mar/03	45.0	Added MSC 512MB parts. (In shaded area)
Apr/03	46.0	Added MSC 512MB parts. (In shaded area) Updated EOL status
Jun/03	47.0	Updated EOL status.
July/03	48.0	Updated EOL status.

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The hardware vendor remains solely responsible for the design, sale and functionality of its product, including any liability arising from product infringement or product warranty. Only approved software drivers and accessories that are recommended for the revision number of the boards and system being operated should be used with Intel products. Please note that, as a result of warranty repairs or replacements, alternate software and firmware versions may be required for proper operation of the equipment.

The SBT2 Server Board 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.

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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 test memory modules for use in the Intel® SBT2 Server Board. Memory is a vital subsystem in a platform. Intel Corporation requires strict guidelines to be met before a memory vendor and part is put onto the qualified memory list. Each Intel Server Board product has a separate qualified memory list.

Memory qualification for Intel®'s Server Board products is performed by Intel's Memory Validation Laboratory (MVL), and by an independent external test laboratory, Computer Memory Test Lab (CMTL)¹. CMTL is a leading memory testing organization responsible for testing a broad range of memory products. Memory devices tested by Intel's MVL or CMTL must undergo rigorous tests to ensure that the product will perform the intended server functions.

Intel®'s Server and Workstation Board 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 memory 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* 2000 Advanced Server for no less than 24 hours. The voltage and temperature margin testing involves testing the memory module on the particular Intel board for which it is being qualified with various test software and operating systems for 48-72 hours under various voltage and temperature margin conditions. Memory modules 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.

For information regarding the testing procedure required to reach each phase, please contact your Intel Representative.

¹ CMTL is an independent memory testing organization responsible for testing a broad range of memory products. Receiving a "PASS" after being tested by CMTL, means that a product functions correctly and consumers can use it 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. CMTL contact:

John Deters	Computer Memory Test Lab (CMTL)
714-960-1243 (voice)	101 Main Street, Suite 2G
714-960-4695 (fax)	Huntington Beach, CA 92648
	http://www.cmtlabs.com

Qualified Memory for the Server Board SBT2

The memory module on the server board SBT2 has 4 DIMM sockets, which can hold up to 4 GB of Registered ECC PC133 memory using four 72 bit DIMM modules. The following memory features are supported:

- 133 MHz, Registered ECC PC-133 compatible 3.3V registered SDRAM modules (in compliance with the PC-133 Registered DIMM Specification)
- DIMMs with capacity of 64MB, 128MB, 256 MB, 512 MB and 1G. Other DRAM sizes may function correctly but will not be validated.
- Minimum configuration is 64MB using one 64MB DIMM.

Below is a chart that lists the current supported memory types: Note:

PC-133 Registered SDRAM Module Configurations for Cas Latency 2 & 3					
DIMM Capacity	DIMM Organization	SDRAM Density	SDRAM Organization	# SDRAM Devices/rows/Banks	# Address bits rows/Banks/column
64MB	8M x 72	64Mbit	8M x 8	9/1/4	12/2/9
128MB	16M x 72	64Mbit	16M x 4	18/1/4	12/2/10
128MB	16M x 72	64Mbit	8M x 8	18/2/4	12/2/10
128MB	16M x 72	128Mbit	16M x 8	9/1/4	12/2/10
256MB	32M x 72	64Mbit	16M x 4	36/2/4	12/2/10
256MB	32M x 72	128Mbit	32M x 4	18/1/4	12/2/11
256MB	32M x 72	128Mbit	16M x 8	18/2/4	12/2/10
256MB	32M x 72	256Mbit	64M x 4	9/1/4	13/2/11
256MB	32M x 72	256Mbit	32M x 8	9/1/4	13/2/10
512MB	64M x 72	128Mbit	32M x 4	36/2/4	12/2/11
512MB	64M x 72	256Mbit	64M x 4	18/1/4	13/2/11
512MB	64M x 72	256Mbit	32M x 8	18/2/4	13/2/10
1GB	128M x 72	256Mbit	64M x 4	36/2/4	13/2/11

Memory features are detailed in *the Server Board SBT2 Technical Product Specification* available online at <http://support.intel.com/support/motherboards/server/SBT2/>

The following table lists DIMM devices known to be compatible with the Intel Server Board SBT2. Intel recommends that Advanced Tested DIMMs be used to establish reliable system operation. DIMM devices not listed can be used; but, in the event of unreliable system operation, the DIMM devices should be replaced with functionally Advanced Tested DIMMs to determine whether the DIMM devices are causing the problem.

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 if there is a discrepancy.

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.

This list is subject to change without notice.

Server Board SBT2

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
Micron	MT9LSDT872G-133C3				7/10/00	3	
Samsung	MM390S0823DT1-C75				7/10/00	3	
*Dane-Elec	DP133R072083A	NT56V6610C0T-75	Nanya	16-25600B rev B	12/12/00		EOL
Samsung	M390S823ET1-C75				2/6/01		
GoldenRAM	7550010-GR	MT48LC8M8A2-75 rev C	Micron	1030238- 001A rev A	4/6/01	3	EOL
Samsung	M390S0823FT1-C7A		Samsung		11/25/01	3	

Modules shaded in blue are low profile

(+) This vendor is part of the CMTL Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

Caution: Some modules on this list may contain "stacked" DRAM parts. These parts may have thermal & physical limitations in some chassis configurations. It is advised to verify that your chassis configuration will support "stacked" parts before purchase.

Server Board SBT2

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
Micron	MT18LSDT1672G-133C2				7/5/00	3	
Micron	MT9LSDT1672G-133B1				7/6/00	3	
Hyundai	HYM7V73AC1601BTNG-75				7/13/00	3	
Samsung	M390S1620DT1-C75				7/16/00	3	
+Dataram	DTM60158	MT48LC16M8A2TG-75 rev B	Micron	40484 rev A	9/1/00		EOL
#Samsung	M390S1723CTU-C75				11/20/00	3	
+Dataram	DTM60168	MT48LC16M8A2TG-75 rev B	Micron	40506 rev A	11/27/00		EOL
Ramax	RMD311S18B4T-7	HYB39S128800CT-75 rev C	Infineon	RPD1182080R62 rev 2	12/21/00	3	EOL
#Aved Memory Products	AMP377P1723AT2-C75/H	HY57V28820AT-H rev A	Hyundai	105399 rev B	1/2/01	3	EOL
ATP Electronics	AR16V72N4S4GAS	K4S640432D-TC75 die D	Samsung	SR168N04V rev 2	1/2/01	3	EOL
Memory Card Technology	DM1672VS65804R-75G	HY57V64820HG rev T-H	Hyundai	650899	1/19/01	3	EOL
+Dane-Elec	DP133R072163EL	K4S280832A-TC75	Samsung	SRBF 2568 rev A	1/30/01	3	EOL
Samsung	M390S1620ET1-C75				2/20/01	3	
#Kingston	KVR133X72RC3L/128-IS	HYB39S128800CT-7.5	Infineon	2025031-002	3/16/01	3	EOL
#Kingston	KVR133X72RC3L/128-IS	TC59SM708FT-75	Toshiba	2025031-002	3/16/01	3	EOL
+ITAUCOM	ICMM16M6872A6MCR-5Q	ICM4V280806-5	Itaucom	4200-06A2	3/27/01	3	EOL
GoldenRAM	7550020-GR	MT48LC8M8A2-75 rev C	Micron	1030238-001A rev A	4/2/01	3	EOL
#PNY	7216ZHSTM4G13TWI-PK0	TC59SM708AFT-75 REV. A	Toshiba	40000494 rev A	4/3/01	3	EOL
+Viking	INT12820	MT 48LC16M8A2-75 rev A	Micron	9001689 REV. A	5/23/01	3	EOL
+#PNY	7216ZHSTM4G13TWI-PH0	HYB39S128800CT-7.5 rev C	Infineon	40000494 rev A	7/2/01	3	EOL
Micron	MT9LSDT1672G-133B1	MT48LC32M4A2-75	Micron	0129 rev A	7/11/01	3	

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
+#Aved Memory Products	AMP377P1723AT2-C7B/MI	MT48LC16M8A2TG-7E rev B	Micron	105399 rev B	7/31/01	3	
+#Dataram	~DTM60168C (Old Part# DTM60168(M))	MT48LC16M8A2TG-75 rev E	Micron	40506 rev A	8/2/01	3	
Hitachi	HB52F169E1-75F		Hitachi		8/23/01	3	
Micron	MT9LSDT1672G-133E1		Micron		8/23/01	3	
Micron	MT9LSDT1672G-13EE1		Micron		10/10/01	3	
Infineon	HYS72V16301GR-7.5-C2		Infineon		11/21/01	3	
Samsung	M390S1620FT1-C7A		Samsung		11/29/01	3	
Samsung	M390S1723DT1-C7A		Samsung		12/03/01	3	
+#ATP Electronics	AR16V72L8S4GAS	K4S280832D-TC75 rev D	Samsung	SR168L08V rev 1	1/14/02	3	
+#Aved Memory Products	AMP377P1723DT2-C75/S	K4S280832D-TC75 rev D	Samsung	105399 rev B	2/2/02	3	
+#Dataram	DTM60168D	HYB39S128800CT-75 rev C	Infineon	40506 rev A	4/21/02	3	EOL

(#)Modules shaded in blue are low profile

(~) Part number change/correction.

(+) This vendor is part of the CMTL Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

Caution: Some modules on this list may contain "stacked" DRAM parts. These parts may have thermal & physical limitations in some chassis configurations. It is advised to verify that your chassis configuration will support "stacked" parts before purchase.

Server Board SBT2

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
Samsung	M390S3320BT1-C75				7/12/00	3	
+Dataram	DTM60125	MT48LC32M4A2TG-75 rev B	Micron	40481 rev A	9/6/00		EOL
Corsair	CM766S256-133/M	MT48LC32M4A2TG-75 rev B	Micron	50-00096 rev A	9/7/00		EOL
Kingston	KVR133X72RC3/256-IS	TC59SM704FT-75	Toshiba	2022254-001 rev A00	9/21/00		EOL
Infineon	HYS72V32300GR-7.5-C2				9/12/00	3	
+Viking	INT25621 And PC13332X72RCL3-IA	K4S560832A-TC75 rev A	Samsung	9001689 rev A	9/26/00		EOL
Century Microelectronics Inc	DTR7E4TS7X3-JC	TC59SM704FT-75	Toshiba	CE021	10/5/00		EOL
+Dane-Elec	DP133R072323E	HYB39S128800CT-7.5 rev B	Infineon	16-25600B rev B	11/01/00		EOL
Hyundai	HYM71V32C735AT4-H				11/20/00	3	
Micron	MT18LSDT3272G-133B1				11/20/00	3	
+Dataram	~DTM60172D (Old Part# DTM60172)	HYB39S256800CT-7.5 rev C	Infineon	40506 rev A	11/20/00		EOL
Aved Memory Products	AMP377P3323AT2-C75/H	HY57V28820AT-H rev A	Hyundai	105352 rev B	11/21/00		EOL
+Viking	INT25624	HY57V28820AT-H	Hyundai	9001742 rev A	1/2/01	3	EOL
ATP Electronics	AR32V72N4S4GAS	K4S280432B-TC75 rev B	Samsung	SR168N04V rev 2	1/4/01	3	EOL
Silicon Tech	INT72R8E32M4H-A75AV	K4S280832C-TC75	Samsung	814	1/30/01	3	EOL
Simple Tech	SINT7232118RD2-75AVG	K4S280832C-TC75	Samsung	814	1/30/01	3	EOL
Samsung	M390S3320CT1-C75				12/15/00	3	
Samsung	M390S3253BTU-C75				2/7/01	3	
Hitachi	HB52RF329E2-75F				2/15/01	3	
#Aved Memory Products	AMP377P3253BTE-C75/S	K4S560832B-TC75 REV.B	Samsung	105399 rev B	2/6/01	3	EOL
GoldenRAM	7550030-GR	MT48LC16M8A2-7.5	Micron	1030238-001A rev A	2/27/01	3	EOL

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
+#Dane-Elec	DP133R072323IL	K4S560832B-TC75	Samsung	SRBF 2568 rev A	3/7/01	3	EOL
+Viking	INT25624	HY57V28820AT-H rev. A	Hyundai	9001742 rev A	3/16/01	3	EOL
ITAUCOM	ICMM32M6872A6MCK-5Q	ICM4V280806-5	Itaucom	4200-06A2	3/27/01	3	EOL
Pacific Force Technology Ltd.	PF-GEN-76843	MT48LC16M8A2-75	Micron	PF1290 rev A	3/7/01	3	EOL
Aved Memory Products	AMP377P3323AT2-C75/MV	V54C3128804VAT-7 rev. A	Mosel-Vitelec	105352 Rev.B	4/6/01	3	EOL
+#Dataram	DTM60188 (60188Z)	MT48LC32M4A2TG-75 rev B	Micron	40506 rev A	4/6/01	3	EOL
#Ramax	RMD361S28B5T-7	HYB39S256800CT-7.5 rev C	Infineon	RPD109108 0R61	4/12/01	3	EOL
+PNY	7232ZHSTM4G24TWR-PK0	TC59SM708AFT-75 REV. A	Toshiba	40000476 rev B	4/25/01	3	EOL
# ATP Electronics	AR32V72N4S4GAS	K4S280432A-TC75 rev A	Samsung	SR168N04V rev 2	5/16/01	3	
#+ATP Electronics	AR32V72N4S4GAS	K4S280432C-TC75 rev C	Samsung	SR168N04V rev 2	7/2/01	3	
Micron	MT18LSDT3272G-133B1	MT48LC32M4A2-75	Micron	0129 rev A	7/20/01	3	
+#Dataram	DTM60188(60188Z)	HYB39S128400CT-7.5 rev C	Infineon	40506 rev A	7/28/01	3	EOL
+PNY	7232ZHSTM4G24TWR-PH0	HYB39S128800CT-7.5 rev C	Infineon	40000476 rev B	8/10/01	3	EOL
+Dataram	DTM60125(60125Z)	MT48LC32M4A2TG-75 rev E	Micron	40481 rev A	8/10/01	3	
+Dane-Elec	DP133R072323IL	K4S560832B-TC75	Samsung	DE082030	08/14/01	3	
+ATP Electronics	AMR32V72J4S4GAS	K4S280432C-TC75 rev C	Samsung	SR168J 04V rev 1	11/08/01	3	
+Aved Memory Products	AMP377P3323DT2-C75/S	K4S280832D-TC75 rev D	Samsung	105352 rev B	11/06/01	3	
Micron	MT9LSDT3272G-133B1		Micron		10/10/01	3	
Micron	MT18LSDT3272G-13EE1		Micron		10/10/01	3	
Samsung	M390S3320DT1-C7A		Samsung		11/06/01	3	
Samsung	M390S3253CT1-C7A		Samsung		11/09/01	3	
+SMART Modular Technologies	SM572324574E03R	K4S280432D-TC75	Samsung	P51G168NE BSIB33 rev B	12/7/01	3	
+SMART Modular Technologies	SM572324574E03R	K4S280432D-TC75	Samsung	P51G168NE BSIB33 rev B	12/7/01	3	

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

+#Dataram	~DTM60172C (Old Part# DTM60172(M))	MT48LC32M8A2TG-75 rev A	Micron	40506 rev A	12/27/01	3	EOL
+Dataram	~DTM68014B (Old Part# DTM68014(M))	MT48LC32M4A2TG-75	Micron	651219-G rev 1	12/19/01	3	EOL
+Dataram	DTM60125 (68014Z)	HY57V28420AT-H rev A	Hyundai	651219-G rev 1	12/19/01	3	EOL
+Legend	L3272QC3-59AHSC3A	HY57V56820T-H rev A	Hyundai	B5982 rev A	1/24/02	3	EOL
+SMART Modular Technologies	SM3272SR301-ICA	TC59S6404CFT75 rev C	Toshiba	P51G168NE BSIBP3	1/22/02	3	EOL
+ATP Electronics	AMR32V72F8S4GAS	K4S280832C-TC75 rev C	Samsung	SR168F08V rev 1	2/7/02	3	
+#Dataram	~DTM60199A (Old Part# DTM60199(M))	MT48LC32M4A2TG-75 rev E	Micron	40551 rev A	2/26/02	3	EOL
+#Dane-Elec	DP133R072323IL	NT5SV32M8AT-7K rev 09300BPT	Nanya	DE082030 rev B	3/21/02	2	
+#Dataram	DTM60172D	HYB39S256800CT-75 rev C	Infineon	40506 rev A	4/9/02	3	EOL
+#Aved Memory Products	AMP377P3323AT2-C75/N	NT5SV16M8CT-7K rev C	Nanya	105352 rev B	4/30/02	3	
+#Dataram	DTM60172E	HYB39S256800DT-7 rev D	Infineon	40506 rev A	5/15/02	3	EOL
+MSC Vertriebs GmbH	MSC256M00040	HYB39S256800CT-7.5 rev C	Infineon	M0508LA1	5/20/02	3	EOL
+Buffalo	VS133-R256/ME	48LC16M8A2-75 rev E	Micron	ZEY8RWF-AA	7/3/02	3	EOL
+Legend	L3272QC3-59AIS73C	HYB39S128800CT-7.5 rev C	Infineon	B5982 rev A	8/7/02	3	
+#MSC Vertriebs GmbH	MSC256M00142	HYB39S256800CT-7.5 rev C	Infineon	M0493LA2	8/19/02	3	
+#Smart Modular Technologies	SM572324574E03R01	K4S280432D-TC75 rev D	Samsung	P52G168NE BSKGSI rev A	8/15/02	3	

(#) Modules shaded in blue are low profile

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Server Board SBT2

**Registered, ECC, 133MHz SDRAM DIMM Modules
512 MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
Infineon	HYS72V64300GG-7.5-C2				7/29/00	3	
Samsung	M390S6450AT1-C75				7/20/00	3	
+Dataram	DTM60133	HYB39S256400CT-7.5 rev C2	Infineon	40481 rev A	8/30/00		EOL
+Viking	INT51209	K4S560832A-TC75	Samsung	9001742	9/19/00		EOL
Kingston	~KVR133X72RC3/512-IS	HYB39S256400AT-75	Infineon	2022254-001	9/27/00		EOL
Century Microelectronics Inc	DTR3S4HT7X3-MC	5225405BTT75	Hitachi	CE021	10/12/00		EOL
Micron	MT36LSDF6472G-133B2				11/20/00	3	
+Dane-Elec	DP133R072643H	K4S560432A-TC75	Samsung	168-327201C rev C	12/11/00		EOL
ATP Electronics	AR64V72N4S8GAS	K4S560432A-TC75 rev A	Samsung	SR168N04V rev 2	1/8/01	3	EOL
Memory Card Technology	DM6472VS24804R-7AG	K4S560832A-TC75	Samsung	650899	1/11/01	3	EOL
GoldenRAM	7550040-GR	K4S560832A-TC75	Samsung	1030238-001 rev A	1/19/01	3	EOL
Simple Tech	SINT7264118IRD2-75AVG	K4S280432C-TC75	Samsung	758	1/17/01	3	EOL
Silicon Tech	INT72R4J64M4H-A75AV	K4S280432C-TC75	Samsung	758	1/17/01	3	EOL
Unigen	UG564T7588KG-PL	HN5225805BTT-75	Hitachi	RAWCARD-E	1/29/01	3	EOL
Aved Memory Products	AMP377P6453BT2-C75/S	K4S560832B-TC75	Samsung	105352 REV. B	1/24/01	3	EOL
+Dataram	DTM60133 (60133Z)	K4S560432A-TC75 rev A	Samsung	40481 rev A2	1/30/01	3	EOL
Samsung	M390S6450BT1-C75				12/5/00	3	
Aved Memory Products	AMP377P6450BT3-C75/S	K4S560432B-TC75 REV. B	Samsung	105349 REV. C	2/6/01	3	EOL
+Dataram	DTM60133 (60133Z)	HM5225405BTT-75 rev A	Hitachi	40481 rev a2	2/9/01	3	EOL

**Registered, ECC, 133MHz SDRAM DIMM Modules
512 MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
+Dane-Elec	DP133R072643I	K4S560832A-TC75	Samsung	16-25600B rev B	3/1/01		EOL
+#Dataram	DTM60176 (60176Z)	HYB39S256800CT-7.5	Infineon	40511 rev A	3/19/01	3	EOL
+#Dataram	DTM60176 (60176Z)	HM5225805BTT-75 REV. B	Hitachi	40511 rev A	3/27/01	3	EOL
+PNY	7264WHSTM8G24TWR-PH0	HYB39S256800CT-7.5 REV. C	Infineon	40000476 rev B	4/26/01	3	EOL
Centon Electronics	CINT512M/RP133S	K4S560432B-TC75	Samsung	CPCB-00505-G	5/7/01	3	
+PNY	7264WHSTM8G24TWR-PH0	HYB39S256800CT-7.5 rev C	Infineon	40000476 rev B	5/10/01	3	EOL
+ATP Electronics	AMR64V72F8S8GA	K4S560832A-TC75	Samsung	SR168F08V rev 1	6/25/01	3	EOL
Simple Tech	ST72R4E64-A75A	UPD45128441G5-A75	NEC	758	7/19/01	3	
Samsung	M390S6450CT1-C7A		Samsung		10/10/01	3	
+Dataram	DTM60133 (68015Z)	HY57V56420T-H	Hyundai	651219-G rev 1	11/05/01	3	
+Legend	L6472WC3-21ASSG3C	K4S560432C-TC75 rev C	Samsung	16-21040 rev A	12/11/01	3	EOL
+Legend	L6472QC3-59AHSC3A	HY57V562820T-H rev A	Hyundai	B5982 rev A	12/3/01	3	EOL
+SMART Modular Technologies	SM572324574E03R	K4S280432D-TC75	Samsung	P51G168NEB SIB33 rev B	12/7/01	3	EOL
+SMART Modular Technologies	SM6472SR301-ICA	K4S560432C-TC75 rev C	Samsung	P51G168NEB SIBP3 rev A	1/17/02	3	EOL
+Dataram	~DTM68015B (Old Part# DTM68015(M))	MT48LC64M4A2T G-75 rev B	Micron	651219-G rev 1	1/25/02	3	EOL
+#ATP Electronics	AR64V72N4S8GAS	K4S560432C-TC75 rev C	Samsung	SR168N04V rev 2	2/13/02	3	
+Aved Memory Products	AMP377P6453AT2-C75/MV	V54C3256804VAT-7 rev A	Mosel-Vitellic	105352 rev B	2/11/02	3	
+#Dataram	DTM60194 (H)	HM5225405BTT-75 rev B	Hitachi	40551 rev A	2/2/02	3	EOL
+#Dataram	~DTM60194C (Old Part# DTM60194(E))	HYB39S256400CT-75 rev C	Infineon	40551 rev A	2/6/02	3	EOL
+#MSC Vertriebs GmbH	MSC512M00001	HYB39S256400CT-7.5	Infineon	M0507LA1	3/20/02	3	
+#Dane-Elec	DP133R072643IL	K4S560832C-TC75 rev C	Samsung	DE082030 rev B	4/11/02	2	

**Registered, ECC, 133MHz SDRAM DIMM Modules
512 MB Sizes (64Mx72)**

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
+Buffalo	VS133-R512/MB	48LC32M8A2-75 rev B	Micron	ZEY8RWF-AA	6/19/02	3	EOL
+#Dataram	DTM60194E	K4S560432D-TC75 rev D	Samsung	40551 rev A	6/26/02	3	EOL
+MSC Vertriebs GmbH	MSC512M00037	K4S560832C-TC rev C	Samsung	M0508LA1	7/31/02	3	EOL
+#MSC Vertriebs GmbH	MSC 512M00151	MSCS8608A8A-75	Fujitsu	PCB M0508LA1	8/12/02	3	
+MSC Vertriebs GmbH	MSC512M00003	MT48LC64M4A2TG-75 rev A	Micron	M0507LA1	8/22/02	3	EOL
+MSC Vertriebs GmbH	MSC512M00041	HYB39S256800CT-7.5 rev C	Infineon	M0508LA1	9/3/02	3	EOL
+#Dataram	DTM60194D	HYB39S256400DT-7 rev D	Infineon	40551 rev A	7/23/02	3	EOL
+MSC Vertriebs GmbH	MSC512M00149	HYB39S256400DT-7 rev D	Infineon	M0507LA1	3/3/2003	2	
+MSC Vertriebs GmbH	MSC 512M00153	HYB 39S256800DT-7.5 rev D	Infineon	PCB M0508LA1	3/12/03	3	

(#) Modules shaded in blue are low profile

(~) Part number change/correction

(+) This vendor is part of the CMTL Certification program. This means this part has/will be tested across all compatible Intel Server Boards. For further information contact CMTL @ <http://cmtlabs.com/>

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Server Board SBT2

Registered, ECC, 133MHz SDRAM DIMM Modules 1G Sizes (128Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CAS Latency	EOL
Infineon	HYS72V128320GR-7.5-A				7/13/00	3	
Samsung	M390S2858BT1-C75				11/20/00	3	
Ramtek Inc.	HD133-CL3-R-1GB-ECC-168	K4S560432B-TC75 rev B	Samsung	HD1331R rev C	12/19/00	3	EOL
ATP Electronics	AR128V72N4SSGAS	K4S560432A-TC75 rev A	Samsung	SR168N0 4V rev 2	12/29/00	3	EOL
+Dataram	DTM60126(60126Z)	HM5225405BTT-75 rev B	Hitachi	40481 rev A2	1/29/01	3	EOL
+Dataram	DTM60126(60126Z)	K4S560432B-TC75 rev B	Samsung	40481 rev A2	2/20/01	3	EOL
# +ATP Electronics	AR128V72N4SSGAS	K4S560432B-TC75 rev B	Samsung	SR168N0 4V rev 2	4/12/01	3	
# +ATP Electronics	AR128V72N4SMGAS	K4S560432B-TC75 rev B	Samsung	SR168N0 4V rev 2	5/4/01	3	
+Dataram	DTM60126(60126Z)	K4S560432B-TC75 rev B	Samsung	40481 rev A	5/9/01	3	EOL
+ATP Electronics	AR128V72J4SSGAS	K4S560432B-TC75 rev B	Samsung	SR168J0 4V rev 1	6/26/01	3	
+PNY	72A0UHSTM8G24KWR-PH0	HYB39S256400C T-7.5 rev C	Infineon	40000475 rev B	7/20/01	3	
Infineon	HYS72V128320GR-7.5-C2		Infineon		10/10/01	3	
+Dataram	~DTM60192C (Old Part# DTM60192(E))	HYB39S256400C T-75 rev C	Infineon	40481 rev A	11/02/01	3	
Netlist Inc	NL3127RS64043-D75K-S2	K4S560432C-TC75000 rev C	Samsung	0139-10	11/01/01	3	
+Viking	INT102409	HM5225405BTT7 5 rev B	Hitachi	9001690 rev B	11/09/01	2	
Samsung	M390S2858CT1-C7A		Samsung		11/16/01	3	
+#Legend	L1272WC3-21ASSG3C	K4S560432C-TC75	Samsung	16-21040 rev A	11/20/01	3	
+SMART Modular Technologies	SM12872SR301-ICA	K4S560432C-TC75 rev C	Samsung	P51G168 NEBSIBP 3	1/24/02	3	EOL
+#Dataram	~DTM60193A (Old Part# DTM60193(M))	MT48LC64M4A2F B-75 rev B	Micron	40554 rev A	2/11/02	3	EOL
+Dataram	DTM60192D	HYB39S256400D T-7 rev D	Infineon	40481 rev A	5/5/2002	3	EOL
+#Dataram	DTM60193B	V54C3256404VB S-7	Mosel-Vitellic	40554 rev A	6/29/02	3	EOL
+#Dataram	DTM60193C	MT48LC64M4A2F B-75 rev B	Micron	40554A rev A	9/9/02	3	EOL
+#Dataram	DTM60193E	MT48LC64M4A2F B-75 rev C	Micron	40554A rev A	1/17/03	3	

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CMTL* (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 Validation Lab. Intel routinely audits the CMTL facility to ensure all procedures, process handling, and testing methodologies are met.

IMPORTANT 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 devices or dissimilar memory device speeds is not recommended. This document contains information which is the proprietary property of Intel Corporation. Nothing in this document constitutes a guaranty, warranty, or license, express or implied. Intel has tested the following DIMMs for minimum electrical and functional compatibility with boxed processors. This listing is not intended to be all inclusive; it only represents the DIMMs Intel or CMTL has tested. Users of this list are reminded to check with the DIMM manufacturer or Distributor to ensure that a particular DIMM model is adequate for the intended purpose on the boxed processor baseboard. Intel provides no indemnities for and expressly disclaims all liabilities for any and all such guaranties, representations, and warranties (oral or written) whether express or implied, related to DIMMs in a Intel® Server Board product, including without limitation to: fitness for a particular purpose; merchantability; noninfringement of intellectual property or other rights of any third party or of Intel. The reader is advised that third parties may have intellectual property rights which may be relevant to this document and the technologies discussed herein, and is advised to seek the advice of competent legal counsel, without obligation of Intel. Intel retains the right to make changes to this document at any time, without notice. Intel makes no warranty or representation with respect to the use of this document or reliance by the reader upon its contents, and assumes no responsibility for any errors which may appear in the document nor does it make a commitment to update the information contained herein.

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