Intel ISP1100 Server Platform
Memory List Test Report Summary

Revision 3.0
November 3rd, 2000

Revision History		
Date	**Rev**	**Modifications**
11/3/00	3.0	Updated with additional tested memory devices
10/4/00	2.0	Updated with additional tested memory devices
9/15/00	1.0	Initial post-launch release.

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*

Table of Contents

Overview of Memory Testing

The following procedure is used to test memory modules for use in the Intel ISP1100 Server. Memory is a vital subsystem in a platform. Intel Corporation requires strict guidelines to be met before a memory vendor is put onto the qualified memory list. Each Intel server product has a separate qualified memory list.

Memory qualification for Intel's Server 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 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 server platform for which it is being qualified with test software operating under Microsoft* Windows NT* version 4.0 and Red Hat Linux* 6.2 SBE2 for no less than 24 hours. The voltage and temperature margin testing involves testing the memory module on the particular server platform 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 a leading 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 ISP1100 Server Platform

The memory module on the ISP1100 server platform has 4 DIMM sockets, which can hold up to 1 GB of ECC memory using 4 DIMM modules. The following memory features are supported:

- 100 MHz, PC-100 compatible 3.3V registered or unbuffered SDRAM modules (in compliance with the PC-100 Registered DIMM Specification, Revision 1.2)
- DIMMs with capacity of 64MB, 128MB, 256 MB, 512 MB. Other DRAM sizes may function correctly but will not be validated.
- Minimum configuration of 32MB using one 32MB DIMM.

Below are the charts that list the current supported memory types:

PC-100 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	128Mbit	16M x 8	9/1/4	12/2/11
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
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

Memory features are detailed in *the ISP1100 Server Platform Technical Product Specification* available on-line at http://support.intel.com/support/motherboards/server/isp1100/spec.htm.

The following table lists DIMM devices known to be compatible with the Intel ISP1100 Server Platform. 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.

ISP1100 Server Platform

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CS Latency	EOL
Micron	MT5LSDT472AG-10EC6				5/11/00		2	

ISP1100 Server Platform

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CS Latency	EOL
Samsung	KMM377S823DT3-GH1				5/11/00		2	
Micron	MT9LSDT872G-10EC3				5/11/00		2	

ISP1100 Server Platform

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CS Latency	EOL
Samsung	KMM374S823DTS-GL				5/11/00		2	
Micron	MT9LSDT872AG-10EC7				5/11/00		2	

ISP1100 Server Platform

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CS Latency	EOL
Micron	MT18LSDT1672G-10EC2				5/12/00		2	
Samsung	KMM377S1620DT3-GH				5/21/00		2	
*Viking	INT12816	UPD45128841G5-A80-9JF	NEC	9001742	8/17/00	B252		
*Dataram	DTM60089	HY57V654020BTC-10P	Hyundai	40455 rev B	8/03/00	B392		

ISP1100 Server Platform

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CS Latency	EOL
Micron	MT9LSDT1672AG-10EB1				5/12/00		2	
Micron	MT18LSDT1672AG-10EC7				5/12/00		2	
Samsung	KMM374S1623DT-GL				5/12/00		2	
*Viking	INT12803	K4S280832B-TC1L rev B	Samsung	9001601 rev A	8/14/00	B384		
*Think Computer	TMINISP1100-128	HYB39S64800CT-8	Infineon	DA-6289 rev A	9/26/00	B464		

*For further information contact CMTL at www.GOLD@cmtlabs.com.

Note: Part Numbers are subject to change at any time.

ISP1100 Server Platform

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CS Latency	EOL
Samsung	KMM377S3323AT-GH				5/15/00		2	
*Dataram	DTM60287 (60087Y)	MT48LC16M8A2 TG-8E B	Micron	40454 rev C	8/23/00	B390		
*Dane-Elec	DP100R072323E	D45128841G5-A80-9JF	NEC	16-25600B	9/15/00	B439		
*Think Computer	TMINISP1100-256	MT48LC16M8A2 TG-8E rev B	Micron	KO-6187 rev A	10/02/00	B470		
*Dane-Elec	DP100R072323E	TC59SM708FT-80	Toshiba	16-25600B rev B	10/25/00	B694		

ISP1100 Server Platform

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	CS Latency	EOL
Micron	MT18LSDT3272AG-10EB1				5/3/00		2	
Samsung	KMM374S3323AT-GL				5/3/00		2	
*Corsair	CM724S256-BX2/M	MT48LC16M8A2 TG-8E	Micron	50-00087A1 rev A1	10/6/00	B533		

*For further information contact CMTL at www.GOLD@cmtlabs.com.

Note: Part Numbers are subject to change at any time.

ISP1100 Server Platform

Registered, ECC, 100MHz SDRAM DIMM Modules
512 MB Sizes (64Mx72)

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

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

Intel® Product Dealers and Product Integrators

The Intel Product Dealer program was designed in North America to support system integrators building and selling a limited number of systems per year. More information on this program is available through the Intel web site at http://channel.intel.com. Similar programs exist in European, Middle Eastern, African, Asia-Pacific and South American regions.

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 Pentium® III 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 Pentium III 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, ISP1100 Server 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.