



Enterprise Server Group

Intel[®] NL440BX/T440BX UP Server Baseboard

Tested Memory List

Revision 70.0

April 2002



Revision History

Revision		Revision History
June, 1998	Rev. 1	Initial release of the NL440BX UP Server System and T440BX Server baseboard tested memory list.
August, 1998	Rev. 2	Updated list with recently tested memory devices. Added information CMTL SM testing and lists.
September, 1998	Rev. 3	Updated list with recently tested memory devices.
October, 1998	Rev. 4	Updated list with recently tested memory devices.
November, 1998	Rev. 5	Updated list with recently tested memory devices.
December, 1998	Rev. 6	Added Dane-Elec memory to the list (shaded modules in table).
December, 1998	Rev. 7	Added Kingston memory to the list (shaded modules in table).
December, 1998	Rev. 8	Added Dataram memory to the list (shaded modules in table).
January, 1999	Rev. 9	Added new memory to the list (shaded modules in table).
February, 1999	Rev. 10	Combining Level 1 & Level 2/Adv as "Advanced" tested. Level 2 testing is now shown as "Basic" testing & Level 3 is shown as "Paper Qual".
March, 1999	Rev. 11	Added new memory to the list w/DRAM part# (shaded modules in table).
March, 1999	Rev. 12	Added new memory to the list (shaded modules in table).
March, 1999	Rev. 13	Added new memory to the list (shaded modules in table).
March, 1999	Rev. 14	Added new memory to the list (shaded modules in table).
April, 1999	Rev. 15	Part number changes for Dataram & add Southland memory (shaded modules in table).
May, 1999	Rev. 16	Added new memory to the list (shaded modules in table).
May, 1999	Rev. 17	Added new memory to the list (shaded modules in table).
May, 1999	Rev. 18	Added new memory to the list (shaded modules in table).
May, 1999	Rev. 19	Added new memory to the list (shaded modules in table).
June, 1999	Rev. 20	Part number changes & corrections (shaded modules in table).
June, 1999	Rev. 21	Part number changes & corrections (shaded modules in table).
June, 1999	Rev. 22	Part number changes & corrections (shaded modules in table).
June, 1999	Rev. 23	Added new memory to the list (shaded modules in table).
July, 1999	Rev. 24	Added new memory to the list (shaded modules in table).
Aug., 1999	Rev. 25	Added new memory to the list (shaded modules in table).
Aug., 1999	Rev. 26	Added new memory to the list (shaded modules in table).
Sept. 1999	Rev. 27	Added new memory to the list (shaded modules in table).
Sept. 1999	Rev. 28	New format, adding DRAM & PCB part numbers. Adding new memory.
Oct. 1999	Rev. 29	Removed Vital memory from the list.
Oct. 1999	Rev. 30	Added DRAM Vendor and CMTL's "Gold Certification" to the list.
Nov. 1999	Rev. 31	Add column to identify product that is end of life (EOL).
Dec. 1999	Rev. 32	Added new memory to the list (shaded modules in table).

Revision(cont.)		Revision History
Dec. 1999	Rev. 33	Part number changes on Samsung parts and removed disapproved parts. Added new qualified part. (In shaded area). Add distributor information.
Jan. 00	Rev. 34	Added new qualified part. (In shaded area). Add distributor information.
Jan. 00	Rev. 35	Added new qualified part. (In shaded area). Added "Old & "New" part numbers for Samsung. Add distributor information.
Jan. 00	Rev. 36	Added Data Ram 256 part. (In shaded area).
Feb. 00	Rev. 37	Added Viking 64MB & ATP Electronics 128MB parts. (In shaded area).
Feb. 00	Rev. 38	Added Smart Modular 256MB part. Added Samsung 128MB & 256MB parts. (In shaded area).
Feb. 00	Rev. 39	Added Dane Elec 128MB parts. (In shaded area).
Mar. 00	Rev. 40	Added Viking 64MB, Dane Elec 128MB and ATP Electronics 256MB parts. (In shaded area).
Mar. 00	Rev. 41	Added Dane Elec 128 & ATP Elec 256MB parts. Part number updates for Samsung. (In shaded area).
April 00	Rev. 42	Added Dataram & GoldenRAM 256MB parts. Added Dane Elec 128MB part. (In shaded area).
May 00	Rev. 43	Added Dane Elec 256MB part. (In shaded area).
May 00	Rev. 44	Added Dane Elec 128MB part. (In shaded area).
June 00	Rev. 45	Added Smart Modular 256MB part. Added DataRam 128MB part. (In shaded area).
June 00	Rev. 46	Added Unigen Corp 256MB part. (In shaded area).
June 00	Rev. 47	Correction on GoldenRAM 256MB part. (In shaded area).
June 00	Rev. 48	Added DataRam 64MB part. (In shaded area).
July 00	Rev. 49	Added Unigen Corp 256MB part. (In shaded area).
July 00	Rev. 50	Added DataRam 128MB part. (In shaded area).
Aug 00	Rev. 51	Added DataRam 128MB part. (In shaded area).
Aug 00	Rev. 52	Added Dane-Elec 128MB part. Added GoldenRAM info to the Distributor section (In shaded area).
Aug 00	Rev. 53	Added Apacer 128MB part. Correction made to GoldenRAM to Goldenram. (In shaded area).
Sept 00	Rev. 54	Added Apacer 256MB part. Added Dane-Elec 64Mb & 128MB parts. (In shaded area).
Sept 00	Rev. 55	Added Dane-Elec 256MB part. (In shaded area).
Oct 00	Rev. 56	Added Think Computer Products Inc. 256MB part. (In shaded area).
Oct 00	Rev. 57	Updated distributor info for Centon Elec & Silicon Tech. Added Dane-Elec 128 & 256MB parts. (In shaded area).
Nov 00	Rev. 58	Added Dane-Elec 64MB, 128MB & 256MB parts. Added Think Computer Products Inc. 128MB part. (In shaded area).
Nov 00	Rev. 59	Added Dane-Elec 64MB & 256MB parts. Added AVED Memory Products 128MB part. (In shaded area).
Dec 00	Rev. 60	Added AVED Memory Products 128MB & 256MB parts. (In shaded area).
Dec 00	Rev. 61	Added AVED Memory Products 64MB & 128MB parts. (In shaded area).
Jan 01	Rev. 62	Added Aved Memory Products 64MB part. (In shaded area).
Jan 01	Rev. 63	Added Dane-Elec 256MB parts. Identified EOL parts. (In shaded area).
Mar 01	Rev. 64	Added Aved Memory Products 128MB & 256MB parts. Dataram 256MB part. Added Dane-Elec 256MB part. (In shaded area).
April 01	Rev. 65	Added Viking 128MB & 64MB parts. Added Aved Memory Products 128MB & 256MB parts. (In shaded area).

Revision(cont.)		Revision History
May 01	Rev. 66	Added Dataram & Viking 128MB parts. Added Aved Memory Products 128MB & 256MB parts. (In shaded area).
June 01	Rev. 67	Added Aved Memory Products 64MB & 128MB parts.. (In shaded area).
June 01	Rev. 68	Added Dataram 256MB part. (In shaded area)
July 01	Rev. 69	Added Dataram 256MB part. (In shaded area)
April 02	Rev. 70	Made correction for total supported memory from 1GB to 768MB of memory (page 8)

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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 qualify Dual In-Line Memory Modules (DIMMs) for use with the NL440BX/T440BX server board. 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 pass Advanced Environmental Testing.

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). CMTLSM is a leading memory testing organization responsible for testing a broad range of memory products. Memory devices tested by Intel's MVL or CMTLSM must undergo rigorous tests to ensure that the product will perform the intended Server and Workstation 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 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 NT* v4.0 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. 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.

CMTL Gold Certification: This certification program is administered and controlled by CMTL. For further information contact CMTL at john@cmtlabs.com

+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 NL440BX/T440BX server boards.

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Qualified SDRAM Memory for the NL440BX/T440BX Server Board

This Server product supports the following memory features:

- 168-pin gold-plated SDRAM DIMM modules
- Support for up to 768 MB ECC SDRAM
- 3.3V memory only
- Support for unbuffered DIMM sizes of 32, 64, 128 MB
- Support for registered DIMM sizes of 64, 128, 256 MB

Memory features are detailed in the *NL440BX/T440BXUP Server Technical Product Specification* available on-line at <http://support.intel.com/support/motherboards/server/T440BX/>

The following tables list DIMM devices known to be compatible with the Intel NL440BX/T440BX Pentium® II processor-ready server board. This document and the DIMM list will be updated as qualified memory is added during the life of the NL440BX/T440BX product.

Intel strongly recommends the use of ECC memory in all server systems. The Intel Pentium® II processors used with the NL440BX/T440BX Server board with a 100MHz-system bus must be paired only with 100MHz SDRAM DIMMs.

Memory modules not listed in the following tables may be used, however, Intel recommends the use of Advanced Tested ECC modules, and in the event of unreliable system operation, the modules should be replaced with Advanced Tested ECC modules to determine whether the unlisted or non - ECC modules are causing the problem. Intel recommends that module and DRAM vendors not be mixed in the same system.

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 CMTLSM 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.

This list is subject to change without notice.

NL440BX/T440BX Server Baseboard

Unbuffered, ECC, 100MHz SDRAM DIMM Modules

32MB Sizes (4Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
+Samsung	(Old #) KMM374S403CT-GL (New #) M374S0403CT0-C1L00				4/24/98		
Micron	MT8LSDT472AG-10BC4				5/18/98		
Toshiba	THMY7216E1BEG-80				7/23/98		
*Dane Elec	DP100-0720426	~DP100-072042B	T.I.	CM-15	1/12/99	A462	EOL
Integritech	IM51E04U7243D4U	HYB39S64160AT-8	Siemens	CM-15	1/12/99	A026	EOL
*Dane Elec	DP100-0720426-TI	~DP100-072042B	Siemens	CM-15	1/21/99	A036	EOL
Micron	MT5LSDT472AG-10CB1				4/28/99		
Micron	MT5LSDT472AG-10EC5				9/28/99		

* For further information contact CMTL at john@cmtlabs.com

+Samsung parts are available under both part numbers.

NL440BX/T440BX Server Baseboard

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
+Samsung	(Old #) KMM374S823BT-GL (New #) M374S0823BT0-C1L00				4/27/98		
Micron	MT9LSDT872AG-10BD2				4/29/98		
Toshiba	THMY7280F1BEG				5/11/98		
NEC	MC-458CA726F-A10				5/18/98		
Mitsubishi	MH8S72AAFD-8C2				5/28/98		
Micron	MT9LSDT872AG-10CD4				6/22/98		
Corsair	CM734S64-BX	KM48S8030BT-GL	Samsung	50-00087A	7/3/98	A049	EOL
Peripheral Enhancements	DM168-33-064M-EP1002SAM	KM48S8030BT-GH	Samsung	168-167203	8/23/98	A079	EOL
Peripheral Enhancements	DM168-33-064M-EP1003SAM	KM48S8030BT-GL	Samsung	168-167203	8/24/98	A077	EOL
*DataRam	DTM60085	MT48LC8M8A2TG	Micron	40451	9/17/98	A072	
*DataRam	DTM60085	D4564841G5-A80-9JF	NEC	40451	9/17/98	A073	
*DataRam	DTM60085	KM48S8030BT-GH	Samsung	40451	9/20/98	A070	
*DataRam	DTM60085	TC59S6408BFT-80	Toshiba	40451	9/20/98	A071	
*DataRam	DTM60085	HM5264805TTB60	Hitachi	40451	9/20/98	A074	
*DataRam	DTM60085	HY57V658020ATC-10P	Hyundai	40451	10/21/98	A060	
*Dane Elec	DP100-072082AU1-N	~DP100-072082A	Siemens	CM-14	12/17/98	A043	EOL
*Dane Elec	DP100-0720826-TI	~DP100-072082A	NEC	CM-15	1/8/99	A037	EOL
*Dane Elec	DP100-0720826	~DP100-072082B	T.I.	CM-15	1/24/99	A196	EOL
Integritech	IM49MO8F7243D4T	MT48LC8M8B4-8E	Micron	CM-16	2/25/99	A475	EOL
Mitsubishi	MH8S72BALD-8				4/22/99		
+Samsung	(Old #) KMM374S823CT-GL (New #) M374S0823CTO-C1L00				5/7/99		
NEC	MC-458CA726LF-A80				5/13/99		
MICRON	MT9LSDT872AG-10EC7				9/28/99		
+SAMSUNG	(Old #) KMM374S823DTS-GL (New #) M374S0823DTS-C1L00				9/28/99		
*Viking	INT6409	HYB39S64800BT-8	Siemens	9001601G rev A	1/14/00	A632	
*Viking	INT6413	HYB39S64800BT-8	Siemens	9001601AG rev A	1/25/00	A646	
*DataRam	DTM60085	HYB39S64800CT-8	Infineon	40451 rev B	6/14/00	A930	
*Aved Memory Products	AMP374P0823BTE-C1H/H	HY57V658020BTC-10P-A rev B	Hyundai	105500 rev A	5/9/01	D213	

* For further information contact CMTL at john@cmtlabs.com.

~ Part number change/correction.

+Samsung parts are available under both part numbers.

NL440BX/T440BX SERVER BASEBOARD

Unbuffered, ECC, 100MHz SDRAM DIMM Modules

128MB Sizes (16Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
Interworks	IW-8E72X18-4-P1	KM48S8030CT-GL	Samsung	16872 A2	1/15/98	A464	EOL
Hitachi	HB52E169EN-B6				5/5/98		
Micron	MT18LSDT1672AG-10BD2				5/8/98		
NEC	MC4516CC726F-A10				5/28/98		
Mitsubishi	MH16S72AAMD-8D0				6/18/98		
Micron	MT18LSDT1672AG-10CD4				6/24/98		
Fujitsu	PDC16UV7284A103TS				6/25/98		
Corsair	CM734S128-BX	KM48S8030BT-GL	Samsung	50-00087A	7/15/98	A069	EOL
+Samsung	(Old #) KMM374S1623CT-GL (New #) M374S1623CT0-C1L00				8/6/98		
Peripheral Enhancements	DM168-33-128M-EP66SAM	KM48S8030BT-G10	Samsung	168-167203	8/23/98	A075	EOL
Peripheral Enhancements	DM168-33-128M-EP1003SAM	KM48S8030BT-GL	Samsung	168-167203	8/24/98	A076	EOL
*DataRam	DTM60086	MT48LC8M8A2TG	Micron	40451	9/11/98	A063	
*DataRam	DTM60086	D4564841G5-A80-9JF	NEC	40451	9/11/98	A064	
*DataRam	DTM60086	HM5264805TTB60	Hitachi	40451	9/15/98	A065	
*DataRam	DTM60086	TC59S6408BFT-80	Toshiba	40451	9/15/98	A066	
*DataRam	DTM60086	KM48S8030BT-GH	Samsung	40451	9/15/98	A067	
Kingston	KGM100X72C3/128	D4564841G5-A10-9JF	NEC	202112-001C00	11/29/98	A045	
*Dane Elec	DP100-072162A	D4564841G5-A80	NEC	CM-14	1/21/99	A042	EOL
Silicon Tech	SL72R4D16M4H-A10AV	D4564441G5-A10-9JF	NEC	00669	2/10/99	A467	
Simple Tech	STI7216118RD1-10AVG	D4564441G5-A10-9JF	NEC	00669	2/10/99	A468	
Integritech	IM49M16F7243D4T	MT48LC8M8B4-8E	Micron	CM-16	3/1/99	A472	EOL
Southland Micro System	SNT U1672P1W4N	D4564841G5-A80-9JF	NEC	120571A	3/11/99	A239	EOL
Mitsubishi	MH16S72BAMD-8				5/3/99		
Qestec	Q167204SG0818L3	MB81F64842C-102FN	Fujitsu	105333	8/13/99	A433	
MICRON	MT18LSDT1672AG-10EC7				9/28/99		
Unigen Corporation	UG516S7448HC-PH	TC59S6408CFT-80	Toshiba	INTEL8X8	12/17/99	A593	
*ATP Electronics	AMC16V72E8S4GLS	KM48S8030CT-GL	Samsung	SC168E08	2/9/00	A663	
*Dane Elec	DP100-072162A-3	81F64842C-103FN	Fujitsu	PC100-1672	2/25/00	A002	
*Dane Elec	DP100-072162A-3	D4564841G5-A80-9JF	NEC	PC100-1672	3/18/00	A007	
*Dane Elec	DP100-072162A-3	TC59S6408CFT-80	Toshiba	PC100-1672	5/12/00	A737	
*DataRam	DTM60086	HYB39S64800CT-8	Infineon	40451 rev B	5/31/00	A932	
*Dane-Elec	DP100-072162AU2	D4564841G5-A80-9JF	NEC	PC16872 A3 rev. B	10/21/00	B514	
Think Computer Products Inc.	TMINT440BX-128	HYB39S64800CT-8	Infineon	DA-6289 rev. A	10/26/00	B460	
*AVED Memory Products	AMP374P1723ATE-C1H/H	HY57V28820AT-P rev A	Hyundai	105500 rev A	2/22/01	C375	

Continued on next page.....

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
*AVED Memory Products	AMP374P1723BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev A	3/9/01	C400	
*Viking	INT12802	HY57V28820AT-S REV. A	Hyundai	9001601 rev A	4/13/01	C868	
*Aved Memory Products	AMP374P1623BTE-C1H/H	HY57V658020bTC-10P-A rev B	Hyundai	105500 rev A	5/4/01	D218	
*Aved Memory Products	AMP374P1623BTE-C1H/H	HY57V658020bTC-10P-A rev B	Hyundai	105500 rev A	5/10/01	D218	
*Dataram	DTM60099(60099Z)(M)	MT48LC16M8A2TG-75 rev E	Micron	40451 rev B	7/10/2001	D665	

* For further information contact CMTL at john@cmtlabs.com.

+Samsung parts are available under both part numbers.

NL440BX/T440BX Server Baseboard

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
+Samsung	(Old #) KMM374S3323T-GL (New #) M374S3323MT0-C1L00				8/11/98		
Toshiba	THMY7232G1EG-80	TC59SM708FT-80	Toshiba	2022187-001.A00	3/10/99	A243	
MICRON	MT18LSDT3272AG-10EB1				10/19/99		
+Samsung	(Old #) KMM374S3323AT-GL (New #) M374S3323AT0-C1L00				01/21/00		
Smart Modular	SM572328574D03P	KM48S16030T-GL rev 0	Samsung	P528168NVBS6G1A	2/21/00	A703	
Smart Modular	SM572328574D03P	HY57V1298020TC-10S	Hyundai	P528168NVBS6G1A	5/19/00	A919	
Unigen Corporation	UG532S7448JC-PH	TC59SM708FT-80	Toshiba	INTEL8X8	7/5/00	B122	
*Aved Memory Products	AMP374P3323BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev A	2/7/01	C393	
*Dane-Elec	DP100-072322E	MT48LC16MA2-8E	Micron	PC16872 A3 rev. b	2/28/01	C724	
*Aved Memory Products	AMP374P3323ATE-C1H/MV	V54C3128804VAT-7 Rev. A	Mosel-Vitelic	105500 rev. A	4/6/01	C544	
*Aved Memory Products	AMP366P3323ATE-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105500 rev A	4/23/01	C997	
*Aved Memory Products	AMP374P3323ATE-C1H/H	HY57V28820AT -P rev A	Hyundai	105500 rev A	4/30/01	D208	

~ Part number change.

+Samsung parts are available under both part numbers.

NL440BX/T440BX SERVER BASEBOARD

Unbuffered, Non-ECC, 100MHz SDRAM DIMM Modules

32 MB Sizes (4Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
*Dane Elec	DP100-064042B	HYB39S64160AT-8	Siemens	CM-15	1/14/99	A198	EOL
Integritech	IM51EO4U6443D4U	HYB39S64160AT-8	Micron	CM-15	1/14/99	A486	EOL
*Dane Elec	DP100-064042B	TMS664164DGE	T.I.	CM-15	1/21/99	A035	EOL
Integritech	IM51M04U6443D4U	48LC4M16A2-8E	Siemens	CM-15	8/18/99	A299	EOL

* For further information contact CMTL at john@cmtlabs.com.

NL440BX/T440BX SERVER BASEBOARD

Unbuffered, Non-ECC, 100MHz SDRAM DIMM Modules

64 MB Sizes (8Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
*Dane Elec	DP100-064082B	D4564841G5-A80	NEC	CM-14	12/17/98	A044	EOL
*Dane Elec	DP100-064082A	TMS664164DGE	T.I.	CM-15	1/9/99	A038	EOL
*Dane Elec	DP100-064082A	HYB39S64160AT-8	Siemens	CM-15	1/20/99	A034	EOL
Integritech	IM51E08U6443D4U	HYB39S64160AT-8	Siemens	CM-15	1/20/99	A028	EOL
Integritech	IM49M08U6443D4T	MT48LC8M8A2-8C	Micron	CM-15	2/6/99	A466	EOL
Integritech	IM50M08U6443D4T	MT48LC8M8B4-8CD	Micron	CM-14	5/2/99	A480	EOL
*Dane-Elec	DP100-064083A	NT56V6610C0T-8A	Nanya	PC16872 rev B	9/8/00	B504	
*Dane-Elec	DP100-064082AU2	D4564841G5-A80-9JF	NEC	PC16872 A3 rev. B	10/25/00	B509	
*Dane-Elec	DP100-064082A	NT56V6610C0T-75B	Nanya	PC16872 A3 rev. B	11/9/00	B476	
*AVED Memory Products	AMP366P0823BTE-C1H/H	HY57V658020BTC-10P rev B	Hyundai	105500 rev A	12/4/2000	B793	

* For further information contact CMTL at john@cmtlabs.com.

NL440BX/T440BX Server Baseboard
Unbuffered, Non-ECC, 100MHz SDRAM DIMM Modules
128 MB Sizes (16Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
*Dane Elec	DP100-064162A	D4564841G5-A80	NEC	CM-14	1/21/99	A041	EOL
Integritech	IM49M16U6443D4T	MT48LC8M8A2TG-8C	Micron	CM-15	2/4/99	A465	EOL
*Dane Elec	DP100-064162A-3	HY57V658020BTC-10S	Hyundai	PCBPC100-1672 rev 1	12/3/99	A614	
*Dane Elec	DP100-064162A-3	48LCM8A2	Micron	PCBPC100-1672 rev 1	12/10/99	A608	
*Dane Elec	DP100-072162A-3	HYB39S64800BT-8 die B	Siemens	PC100-1672	3/12/00	A757	
*Dane Elec	DP100-064162A-3	HYB39S64800BT-8	Siemens	PC100-1672 rev 1.0	4/19/00	A713	
*Dane Elec	DP100-064162A	D4564841G5-A80-9JF	NEC	PC100-1672 rev 1.0	7/22/00	A718	
*Dane-Elec	DP100-064162A-3	TC59S6408CFT-80	Toshiba	PC100-1672	7/31/00	A725	
*Dane-Elec	DP100-064162A	NT56V6610C0T-75B	Nanya	PC16872 A3 rev.B	9/2/00	B479	
*Dane-Elec	DP100-064162AU2	D4564841G5-A80-9JF	NEC	PC16872 A3 rev. B	10/5/00	B487	
*Dane-Elec	DP100-064163A	NT56V6610C0T-8A	Nanya	PC16872 A3 rev. B	10/5/00	B494	
*Dane-Elec	DP100-064163AU2	HYB39S64800BT-8	Infineon	PC16872 A3 rev. B	11/01/00	B500	
*AVED Memory Products	AMP366P1723ATE-C1H/H	HY57V28820AT-P rev. A	Hyundai	105500 rev. A	11/14/00	B701	
*AVED Memory Products	AMP366P1723BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev A	11/29/00	B706	
*AVED Memory Products	AMP366P1623BTE-C1H/H	HY57V658020ETC-10P-A rev B	Hyundai	105500 rev A	12/7/00	B788	
*Viking	PE16721R4SN3-UN04	MT48LC16M8A2-8E REV. B	Micron	9001742 rev A	3/7/01	C269	
*Viking	INT12805	UPD45128841G5-A80	NEC	9001601 rev A	4/2/01	C926	

* For further information contact CMTL at john@cmtlabs.com.

NL440BX/T440BX SERVER BASEBOARD

Unbuffered, Non-ECC, 100MHz SDRAM DIMM Modules

256 MB Sizes (16Mx64)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
*Dane Elec	DP100-064323E	HM5212805LTD10	Hitachi	CM-14	2/13/99	A471	EOL
*AVED Memory Products	AMP366P3323ATE-C1H/H	HY57V28820AT-P rev A	Hyundai	105500 rev A	11/22/00	B745	
*AVED Memory Products	AMP366P3323BTE-C1H/S	K4S280832B-TC1H rev B	Samsung	105500 rev. A	11/30/00	B740	
*AVED Memory Products	AMP366P3323ATE-C1H/MV	V54C3128804VAT-7 rev. A	Mosel-Vitelic	105500 rev A	4/5/01	C500	

* For further information contact CMTL at john@cmtlabs.com.

NL440BX/T440BX SERVER BASEBOARD

Registered, ECC, 100MHz SDRAM DIMM Modules

64MB Sizes (8Mx72)

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
IBM	IBM13M8734HCB-360T				4/29/98		
Samsung	KMM377S823BT1-GL				5/29/98		EOL
Micron	MT9LSDT872G-10CD1				6/10/98		
Hitachi	HB52E89E1-B6				6/30/98		
Celestica	DG064JLBFM00	MT48LC8M8A2TG-8E	Micron	43115C	3/19/99	A249	EOL
NEC	MC-458DA726F-A80				5/13/99		
Hyundai	HYM7V75AS801BTHG-10S	HY57V658020BTC-10S	Hyundai	9905-1	6/3/99	A383	
*AVED Memory Products	AMP377P0823BT2-C1H/H	HY57V658020BTC-10P-A rev B	Hyundai	105399 rev B	12/19/00	B991	
*Viking	PE8721R4SN3-UN01	UPD4564841G5-A80	NEC	9001602	3/26/2001	C255	

NL440BX/T440BX SERVER BASEBOARD

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
IBM	IBM13M16734BCB-360T				4/29/98		
+Samsung	(Old #) KMM377S1620BT1-GL (New #) M377S1620BT1-C1L00				6/8/98		EOL
NEC	MC4516DA726F-A80				8/3/98		
Peripheral Enhancements	DM168-33-128M-EP1002SAM	KM48S8030BT-GH	Samsung	168-167203	8/23/98	A078	EOL
*DataRam	DTM60086	HY57V658020ATC-10P	Hyundai	40451	10/22/98	A061	
*DataRam	DTM60089	MT48LC16M4A2TG	Micron	40455	10/30/98	A058	
*DataRam	DTM60089	KM44S16030BT-GH	Samsung	40455	10/30/98	A059	
*DataRam	DTM60089	TC59S6404BFT-80	Toshiba	40455	11/2/98	A057	
*DataRam	DTM60089	HY57V654020ATC-10P	Hyundai	40455	11/21/98	A046	
All Components	AC16X72S8R2	D4564441G5-A80-9JF	NEC	16X72RBX1	3/16/99	A242	
Celestica	DG128JLBFS00	KM48S8030BT-GH	Samsung	43115C	3/16/99	A244	EOL
Celestica	DG128JLBFM00	MT48LC8M8A2TG-8E	Micron	43115C	3/19/99	A247	EOL
+Samsung	(Old #) KMM377S1620CT3-GH (New #) M377S1620CT3-C1H00				5/21/99		
Hyundai	HYM7V75AS1601BTNG-10S	HY57V654020BTC-10S	Hyundai	9916-3	7/22/99	A384	
+SAMSUNG	(Old #) KMM377S1620DT3-GL (New #) M377S1620DT3-C1L00				9/28/99		
MICRON	MT18LSDT1672G-10EC2				10/23/99		
+SAMSUNG	(Old #) KMM377S1620DT3-GH (New #) M377S1620DT3-C1H00				12/16/00		
Unigen Corporation	UG516S7544HG-PH	TC59S6404BFT-80	Toshiba	RAWCARD-B	12/30/99	A594	
*DataRam	DTM60089	HYB39S64400CT-8	Infineon	40455 rev B	7/13/00	A937	
*Aved Memory Products	AMP377P1723BT2-C1H/S	K4S280832B-TC1H rev B	Samsung	105399 rev B	2/16/01	C387	
*Aved Memory Products	AMP377P1723AT2-C1H/H	HY57V28820AT-P rev A	Hyundai	105399 rev B	3/19/01	C381	
*Dataram	DTM60089 (60089Z)	MT48LC16M4A2TG-8E Rev. C	Micron	40455 rev B	4/10/01	C745	
*Aved Memory Products	AMP377P1723AT2-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105399 rev B	4/25/2001	C990	

~ Part number change/correction.

+Samsung parts are available under both part numbers.

* For further information contact CMTL at john@cmtlabs.com.

NL440BX/T440BX SERVER BASEBOARD

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
Hitachi	HB52R329E2-B6				5/18/98		
IBM	IBM13M32734BCC-360Y				5/27/98		
StakTek	SM401S012LBSAG-HAC	SS232X400030BSG	Samsung	12201-02	6/23/98	A080	EOL
+Samsung	(Old #) KMM377S3323T-GL (New #) M377S3323MT0-C1L00				5/10/99		
+Samsung	(Old #) KMM377S3227BT1-GL (New #) M377S3227BT1-C1L00				6/29/99		
Fujitsu	PKC32RV7244B-103TP				6/30/98		
Kentron	KT3272SFN0R14	MT48LC16M4A2TG	Samsung	3272SFN	7/6/98	A097	EOL
*DataRam	DTM60087	TC5956408BFT-80	Toshiba	40453	9/11/98	A062	
Corsair	CM754S256-BX/S	KM44S16030BT-GL	Samsung	50-00091A	9/17/98	A068	EOL
Corsair	CM744S256-BX/S	KMM44S16030BT-GL	Samsung	50-00092A	11/4/98	A050	EOL
*DataRam	DTM60087	KM44S16030BT-GH	Samsung	40453	11/20/98	A047	
DensePac	DPSP32MR72RW5-PC100-CL3	KM44S16030BT-GL	Samsung	50 00092	1/29/99	A208	EOL
Silicon Tech	SL72R4G32M4H-A10AV	TC5956404BFT-80	Toshiba	00734	2/10/99	A470	
Simple Tech	STI7232118IRD2-10AVG	TC59S6404BFT-80	Toshiba	00734	2/10/99	A469	
Southland Microsystem	SNT 256MB-PC1EP	HM5264405TTB60	Hitachi	09-7370	4/9/99	A352	EOL
Centon Electronics	CINT256M/RP100S	V54C365404VBT8PC	Mosel-Vitellic	CPCB-00401	6/11/99	A341	
Qestec	Q3272P4SG0836L3	MB81F64442C-102FN	Fujitsu	105349B	8/17/99	A432	
*DataRam	DTM60287	MT48LC16M8A2TG-8E	Micron	40454 rev C	2/2/00	A638	
*ATP Electronics	AMR32V72F8S4GLS	KM48S1603BT-GL.	Samsung	SR168F08V rev 1.0	3/13/00	A773	
*DataRam	DTM60287	HY57V1298020TC-10P	Hyundai	40454 rev C	4/2/00	A640	
*Dane Elec	DP100R72322E	D45128841G5-A75-9JF	NEC	16-25600A rev A	5/5/00	A828	
*GoldenRAM	T440BX/256REC-GR	TC59SM708FT-80	Toshiba	1030095-001A	4/12/00	A795	
Unigen Corporation	UG532S7548JG-PH	TC59SM708FT-80	Toshiba	RAWCARD-E	6/5/00	B121	
Apacer	71.84325.412	MT48LC16M8A2TG-8E	Micron	48.16063.012	8/25/00	B412	
*Dane-Elec	DP100R072323E	D45128841G5-A80-9JF	NEC	16-25600B rev. B	9/22/00	B435	
Think Computer Products Inc.	TMINT440BX-256R	MT48LC16M8A2-8E rev. B	Micron	KO-6178 Rev A	9/26/00	B466	
*Dane-Elec	DP100R072322E	D45128841G5-A80-9JF	NEC	16-25600B rev. B	10/6/00	B441	
*Dane-Elec	DP100R072323E	K4S280832B-TC1H	Samsung	16-25600B rev. B	10/25/2000	B562	

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

Manufacturer	Part Number	DRAM Part Number	DRAM Vendor	PCB Part Number	Date	CMTL Test #	EOL
*Dane-Elec	DP100R072323E	TC59SM708FT-80	Toshiba	16-25600B rev. B	11/02/00	B693	
*Dane-Elec	DP100R072322E	TC59SM708FT-80	Toshiba	16-25600B rev. B	11/7/00	B688	
*Dane-Elec	DP100R072322E	HYB39S128800CT-8	Infineon	16-25600B rev B	1/10/01	B951	
*Dane-Elec	DP100R072323E	HYB39S128800CT-8	Infineon	16-25600B rev B	1/15/01	B959	
*Aved Memory Products	AMP377P3323BT2-C1H/S	K4S280832B-TC1H rev B	Samsung	105352 rev B	2/12/01	C398	
*Aved Memory Products	AMP377P3323AT2-C1H/H	HY57V28820AT-P rev A	Hyundai	105352 rev B	2/19/01	C404	
*Dataram	DTM60287(60087Y)	MT48LC16M8A2TG-75 REV. B	Micron	40454 REV. C	2/27/01	C298	
*Aved Memory Products	AMP377P3323AT2-C1H/MV	V54C3128804VAT-7 rev. A	Mosel-Vitelic	105352 rev A	3/27/01	C506	
*Aved Memory Products	AMP377P3323AT2-C1H/MI	MT48LC16M8A2TG-7E rev A	Micron	105352 rev B	4/23/01	D067	
*Dataram	DTM60189(M)(60189Z)	MT48LC16M8A2TG-75 rev E	Micron	40532 rev B	6/19/2001	C903	

~ Part number change/correction.

+Samsung parts are available under both part numbers.

* For further information contact CMTL at john@cmtlabs.com.

DISTRIBUTOR INFORMATION

ASIA

Vendor Name	Distributor Name	Contact Name	Phone Number	Fax Number/E-Mail
Centon Electronics		John Hardacre	800-234-9292	
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	http://www.corsairmicro.com/sales.htm
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
Hyundai		tkhan	+82-2-746-6639	T.K.Han@hei.co.kr
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Micron				http://www.micron.com/mti/msp/html/salesint.html
Samsung				http://www.korea.samsungs-emi.com/top/contactus/contactus_index.htm
Silicon Tech				http://www.simpletech.com/about/buyprod.html
Simple Tech				http://www.simpletech.com/about/buyprod.html

Europe

Vendor Name	Distributor Name	Contact Name	Phone Number	Fax Number/E-Mail
Centon Electronics		John Hardacre	800-234-9292	
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	http://www.corsairmicro.com/sales.htm
Dane-Elec			(353) 91 55 30 00	: sales@dane-elec.ie
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				http://www.kingston.com/partners/default.asp
Micron				http://www.micron.com/mti/misp/html/salesint.html
Samsung				http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm
Silicon Tech Inc.	Microtronica-Sweden	Jorgen Carlsson	00 46 86 807800	http://www.simpletech.com/about/buyprod.html
Silicon Tech Inc.	Microtronic a-Denmark	Brigitte Kraglund	00 45 44 508100	http://www.simpletech.com/about/buyprod.html
Silicon Tech Inc.	Eurodis Bytech	Carol Boycott	00 44 1256 379312	http://www.simpletech.com/about/buyprod.html
Silicon Tech Inc.	Eurocomposant	Julie Fichot	00 33 130649515	http://www.simpletech.com/about/buyprod.html
Silicon Tech Inc.	NBN System Components	Adalbert Reidle	00 49 815292360	http://www.simpletech.com/about/buyprod.html
Simple Tech				http://www.simpletech.com/about/buyprod.html
Southland Microsystems				http://www.southlandmicro.com/index2.html

Japan

Vendor Name	Distributor Name	Contact Name	Phone Number	Fax Number/E-Mail
Centon Electronics		John Hardacre	800-234-9292	
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	http://www.corsairmicro.com/sales.htm
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				http://www.kingston.com/partners/default.asp
Micron				http://www.micron.com/mti/msp/html/salesint.html
Samsung				http://www.korea.samsungsemi.com/top/contactus/contactus_index.htm
Silicon Tech				http://www.simpletech.com/about/buyprod.html
Simple Tech				http://www.simpletech.com/about/buyprod.html
Southland Microsystems				http://www.southlandmicro.com/index2.html

South America & Mexico

Vendor Name	Distributor Name	Contact Name	Phone Number	Fax Number/E-Mail
Centon Electronics		John Hardacre	800-234-9292	
Corsair (USA)		Richard Hashim	01-510-657-8747 ext. 204	http://www.corsairmicro.com/sales.htm
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				http://www.kingston.com/partners/default.asp
Micron				http://www.micron.com/mti/msp/html/salesint.html
Silicon Tech				http://www.simpletech.com/about/buyprod.html
Simple Tech				http://www.simpletech.com/about/buyprod.html
Southland Microsystems				http://www.southlandmicro.com/index2.html

North America

Vendor Name	Distributor Name	Contact Name	Phone Number	Fax Number/E-Mail
Celestica			1-888-899-9998	memorysales@celestica.com
Centon Electronics		John Hardacre	800-234-9292	
Corsair	Synnex Information Technologies	Jack Chen	800-756-9888	http://www.corsairmicro.com/sales.htm
Dane-Elec			(714) 727-9093	sales@dane-memory.com
Dataram	Avnet, Inc.		800-426-7999	
Dataram	Arrow ICP		888-427-2250	
Dataram	Pioneer Standard Electronics/Keylink Systems		800-539-5465	
Dataram	Wyle Systems		800-318-9953	
GoldenRAM www.goldenram.com	Direct Sales	ason M. Barrette Michael Meyer	800/222-8861 ext. 7546 800/222-8661 ext. 7512	jasonb@goldenram.com 949/460-7646 fax michaelm@goldenram.com 949/460-7612 fax
InterWorks Computer Products	Direct Sales		949-599-0100	949-599-0113
Kingston				http://www.kingston.com/partners/default.asp
Micron				http://www.micron.com/mti/msp/html/salesna.html
Samsung				http://www.korea.samsungs-emi.com/top/contactus/contactus_index.htm
Silicontech Inc.	Pioneer Standard	Laurie Boyd	(408) 586-5693	http://www.simpletech.com/about/buyprod.html
Silicontech Inc.	Bell Microproducts	Gary Lewis	(408) 451-1684	http://www.simpletech.com/about/buyprod.html
Silicontech Inc.	Reptron Electronics, Inc.	Patricia Hirshey	(813) 854-6373	http://www.simpletech.com/about/buyprod.html
Silicontech Inc.	Wyle Electronics	Donna Fisher	(949) 788-3723	http://www.simpletech.com/about/buyprod.html
Simple Tech				http://www.simpletech.com/about/buyprod.html
Southland Microsystems				http://www.southlandmicro.com/index2.html

COMPUTER MEMORY TEST LABS (CMTLSM) MEMORY TESTING

CMTLSM is a privately owned and operated memory testing organization responsible for testing a broad range of memory products. Memory devices tested by CMTLSM 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. CMTLSM has the ability to test and certify memory on Intel-based server platforms. The list of memory modules, which have undergone testing through the CMTLSM 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 CMTLSM with Intel server products and test procedures defined by Intel's Memory Qualification Lab. Intel routinely audits the CMTLSM facility to ensure all procedures, process handling, and testing methodologies are met.

INTEL[®] PRODUCT DEALERS

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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[®] II processors. This listing is not intended to be all inclusive; it only represents the DIMMs Intel or CMTLSM 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 II 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 NL440BX/T440BX 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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