



# DDR4 nECC/ECC UDIMM

## Validation Results

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**August 2021**



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# **DDR4 nECC/ECC UDIMM Validation Results**

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Listed below are validation results from a small sample of DDR4 nECC/ECC UDIMM tested on Intel client reference platforms. We are providing this information as a guide to memory compatibility with Intel reference platforms and in-accordance to Intel platform memory POR (Plan of Record). This testing is not intended to replace the normal OEM component qualification process. For test results on specific Intel motherboards refer to Intel Client Customer Enabling support. For test results on OEM production motherboards, please refer to the OEM's list of qualified memory suppliers.



## DDR4 3200 nECC UDIMM, 1/2DIMM/Ch, 2 Channels, Tested at 1.2V Vdd

DIMM Supplier	DIMM Part Number	DIMM Size	Raw Card	DRAM Supplier	DRAM Part Number	DRAM Density	DRAM Width	DRAM Date Code	Die Revision
Crucial	CT32G4DFD832A.16FE1	32 GB	B2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2032	E
Crucial	CT32G4DFD832A.16FB1	32 GB	B2	Micron	MT40A2G8VA-062E:B	16 Gb	x8	2020	B
Crucial	CT16G4DFD832A.8FE1	16 GB	A2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2032	E
Crucial	CT16G4DFRA32A	16 GB	A2	Micron	MT40A2G8VA-062E:B	16 Gb	x8	2020	B
Crucial	CT8G4DFRA32A.4FE1	8 GB	C0	Micron	MT40A1G16KD-062E:E	16 Gb	x16	2034	E
Kingston	KVR32N22S8/16	16 GB	A3	SK Hynix	H5ANAG8NCJR-XNC	16 Gb	x8	2040	C
Kingston	KVR32N22S6/8	8 GB	C0	SK Hynix	H5ANAG6NCJR-XNC	16 Gb	X16	2040	C
Micron	MTA16ATF4G64AZ-3G2E1	32 GB	B2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2032	E
Micron	MTA16ATF4G64AZ-3G2B1	32 GB	B2	Micron	MT40A2G8VA-062E:B	16 Gb	x8	2020	B
Micron	MTA8ATF2G64AZ-3G2E1	16 GB	A2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2032	E
Micron	MTA8ATF2G64AZ-3G2B1	16 GB	A2	Micron	MT40A2G8VA-062E:B	16 Gb	x8	2020	B
Micron	MTA4ATF1G64AZ-3G2E1	8 GB	C0	Micron	MT40A1G16KD-062E:E	16 Gb	x16	2034	E
Nanya	NT8GA64D88CX3F-JR	8 GB	A2	Nanya	NT5AD1024M8C3-JR	8 Gb	X8	2045	C
Ramaxel	RMUA5220KA96HAF-3200	8 GB	C0	Samsung	K4AAG165WA-BCWE	16 Gb	x16	2037	A
Ramaxel	RMUA5190KC86H9F-3200	4 GB	C0	Samsung	K4A8G165WC-BCWE	8 Gb	x16	2040	C
Samsung	M378A4G43AB2-CWE	32 GB	B2	Samsung	K4AAG085WA-BCWE	16 Gb	x8	2034	A

DIMM Supplier	DIMM Part Number	DIMM Size	Raw Card	DRAM Supplier	DRAM Part Number	DRAM Density	DRAM Width	DRAM Date Code	Die Revision
Samsung	M378A2G43AB3-CWE	16 GB	A3	Samsung	K4AAG085WA-BCWE	16 Gb	x8	2034	A
Samsung	M378A2K43EB1-CWE	16 GB	B1	Samsung	K4A8G085WE-BCWE	8 Gb	x8	2025	E
Samsung	M378A1G44AB0-CWE	8 GB	C0	Samsung	K4AAG165WA-BCWE	16 Gb	x16	2028	A
Samsung	M378A1K43EB2-CWE	8 GB	A2	Samsung	K4A8G085WE-BCWE	8 Gb	x8	2025	E
SK Hynix	HMAA4GU6CJR8N-XNN0	32 GB	B2	SK Hynix	H5ANAG8NCJR-XNC	16 Gb	x8	2031	C
SK Hynix	HMAA2GU6CJR8N-XNN0	16 GB	A3	SK Hynix	H5ANAG8NCJR-XNC	16 Gb	x8	2034	C
SK Hynix	HMA82GU6CJR8N-XNN0	16 GB	B2	SK Hynix	H5AN8G8NCJR-XNC	8 Gb	x8	2031	C
SK Hynix	HMA82GU6DJR8N-XNN0	16 GB	B2	SK Hynix	H5AN8G8NDJR-XNC	8 Gb	x8	2032	D
SK Hynix	HMA81GU6DJR8N-XNN0	8 GB	A2	SK Hynix	H5AN8G8NDJR-XNC	8 Gb	x8	2032	D
SK Hynix	HMAA1GU6CJR6N-XNN0	8 GB	C0	SK Hynix	H5ANAG6NCJR-XNC	16 Gb	X16	2034	C
SK Hynix	HMA851U6DJR6N-XNN0	4 GB	C0	SK Hynix	H5AN8G6NDJR-XNC	8 Gb	x16	2027	D



## DDR4 2933 nECC UDIMM, 1/2DIMM/Ch, 2 Channels, Tested at 1.2V Vdd

DIMM Supplier	DIMM Part Number	DIMM Size	Raw Card	DRAM Supplier	DRAM Part Number	DRAM Density	DRAM Width	DRAM Date Code	Die Revision
Crucial	CT32G4DFD832A.16FB1	32 GB	B2	Micron	MT40A2G8VA-062E:B	16 Gb	x8	1916	B
Crucial	CT32G4DFD832A.16FE1	32 GB	B2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	1936	E
Crucial	CT16G4DFS832A.8FE1	16 GB	A2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	1930	E
Crucial	CT16G4DFD832A.16FE1	16 GB	B1	Micron	MT40A1G8SA-062E:E	8 Gb	x8	1928	E
Crucial	CT8G4DFS832A.8FE1	8 GB	A2	Micron	MT40A1G8SA-062E:E	8 Gb	x8	1928	E
Crucial	CT16G4DFD832A.16FJ1	16 GB	B1	Micron	MT40A1G8SA-062E:J	8 Gb	x8	1828	J
Crucial	CT8G4DFS832A.8FJ1	8 GB	A2	Micron	MT40A1G8SA-062E:J	8 Gb	x8	1828	J
Kingston	KVR29N21D8/32	32 GB	B2	Micron	MT40A2G8VA-062E:B	16 Gb	x8	1934	E
Kingston	KVR29N21D8/32	32 GB	B2	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	1942	A
Kingston	KVR32N22D8/32	32 GB	B2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2016	E
Kingston	KVR32N22D8/32	32 GB	B2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2004	E
Kingston	KVR32N22D8/32	32 GB	B2	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2006	A
Kingston	KVR32N22D8/32	32 GB	B2	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2006	A
Kingston	KVR32N22D8/32	32 GB	B2	SK Hynix	H5ANAG8NCJR-XNC	16 Gb	x8	2044	C
Kingston	KVR29N21D8/16	16 GB	B1	Micron	MT40A1G8SA-062E:J	8 Gb	x8	1914	J
Kingston	KVR29N21D8/16	16 GB	B1	SK Hynix	H5AN8G8NCJR-WMC	8 Gb	x8	1911	C
Kingston	KVR29N21S8/16	16 GB	A3	Micron	MT40A2G8VA-062E:B	16 Gb	x8	1934	B

DIMM Supplier	DIMM Part Number	DIMM Size	Raw Card	DRAM Supplier	DRAM Part Number	DRAM Density	DRAM Width	DRAM Date Code	Die Revision
Kingston	KVR29N21S8/16	16 GB	A3	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	1942	A
Kingston	KVR29N21D8/16	16 GB	B2	Micron	MT40A1G8SA-062E:E	8 Gb	x8	1944	E
Kingston	KVR32N22S8/16	16 GB	A3	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2018	E
Kingston	KVR32N22D8/16	16 GB	B2	SK Hynix	H5AN8G8NCJR-XNC	8 Gb	x8	2001	C
Kingston	KVR32N22D8/16	16 GB	B2	SK Hynix	H5AN8G8NDJR-XNC	8 Gb	x8	1943	D
Kingston	KVR32N22S8/16	16 GB	A3	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2004	E
Kingston	KVR32N22S8/16	16 GB	A3	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2006	A
Kingston	KVR32N22S8/16	16 GB	A3	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2006	A
Kingston	KVR32N22S8/16	16 GB	A3	Micron	MT40A2G8VA-062E:B	16 Gb	x8	2108	B
Kingston	KVR32N22D8/16	16 GB	B2	Micron	MT40A1G8SA-062E:R	8 Gb	x8	2116	R
Kingston	KVR29N21S8/8	8 GB	A2	Micron	MT40A1G8SA-062E:J	8 Gb	x8	1914	J
Kingston	KVR29N21S8/8	8 GB	A2	SK Hynix	H5AN8G8NCJR-WMC	8 Gb	x8	1911	C
Kingston	KVR29N21S8/8	8 GB	A3	Micron	MT40A1G8SA-062E:E	8 Gb	x8	1944	E
Kingston	KVR32N22S6/8	8 GB	C0	Micron	MT40A1G16KD-062E:E	16 Gb	X16	2004	E
Kingston	KVR32N22S6/8	8 GB	C0	Micron	MT40A1G16KD-062E:E	16 Gb	x16	2004	E
Kingston	KVR32N22S8/8	8 GB	A3	SK Hynix	H5AN8G8NCJR-XNC	8 Gb	x8	2001	C
Kingston	KVR32N22S8/8	8 GB	A3	SK Hynix	H5AN8G8NDJR-XNC	8 Gb	x8	1943	D
Kingston	KVR32N22S8/8	8 GB	A3	Micron	MT40A1G8SA-062E:R	8 Gb	x8	2116	R
Kingston	KVR32N22S6/8	8 GB	C0	Micron	MT40A1G16RC-062E:B	16 Gb	x16	2108	B



DIMM Supplier	DIMM Part Number	DIMM Size	Raw Card	DRAM Supplier	DRAM Part Number	DRAM Density	DRAM Width	DRAM Date Code	Die Revision
Kingston	KVR32N22S6/8	8 GB	C0	SK Hynix	H5ANAG6NCJR-XNC	16 Gb	x16	2040	C
Kingston	KVR32N22S6/4	4 GB	C0	SK Hynix	H5AN8G6NCJR-WMC	8 Gb	x16	2003	C
Kingston	KVR32N22S6/4	4 GB	C0	SK Hynix	H5AN8G8NDJR-XNC	8 Gb	x16	1930	D
Kingston	KVR32N22S6/4	4 GB	C0	Micron	MT40A512M16TB-062E:R	8 Gb	x16	2116	R
Micron	MTA16ATF4G64AZ-3G2B1	32 GB	B2	Micron	MT40A2G8VA-062E:B	16 Gb	x8	1916	B
Micron	MTA16ATF4G64AZ-3G2E1	32 GB	B2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	1936	E
Micron	MTA8ATF2G64AZ-3G2E1	16 GB	A2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	1930	E
Micron	MTA16ATF2G64AZ-3G2E1	16 GB	B1	Micron	MT40A1G8SA-062E:E	8 Gb	x8	1928	E
Micron	MTA8ATF1G64AZ-3G2E1	8 GB	A2	Micron	MT40A1G8SA-062E:E	8 Gb	x8	1928	E
Micron	MTA16ATF2G64AZ-3G2J1	16 GB	B1	Micron	MT40A1G8SA-062E:J	8 Gb	x8	1828	J
Micron	MTA8ATF1G64AZ-3G2J1	8 GB	A2	Micron	MT40A1G8SA-062E:J	8 Gb	x8	1828	J
Micron	MTA4ATF1G64AZ-3G2E1 (ZES)	8 GB	C0	Micron	MT40A1G16KD-062E:E	16 Gb	X16	1940	E
Micron	MTA4ATF51264AZ-3G2J1 (ZES)	4 GB	C0	Micron	MT40A512M16TB-062E:J	8 Gb	X16	1938	J
Micron	MTA4ATF51264AZ-3G2E1 (ZES)	4 GB	C0	Micron	MT40A512M16LY-062E:E	8 Gb	X16	1928	E
Ramaxel	RMUA5210ME88HCF-3200	32 GB	B2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2012	E
Ramaxel	RMUA5200ME88HBF-3200	16 GB	A2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2004	E
Ramaxel	RMUA5190ME96HAF-3200	8 GB	C0	Micron	MT40A1G16KD-062E:E	16 Gb	X16	2006	E
Ramaxel	RMUA5200MJ78HAF-3200	8 GB	A2	Micron	MT40A1G8SA-062E:J	8 Gb	x8	1948	J
Ramaxel	RMUA5190ME96HAF-3200	8 GB	C0	Micron	MT40A1G16KD-062E:E	16 Gb	x16	1940	E



DIMM Supplier	DIMM Part Number	DIMM Size	Raw Card	DRAM Supplier	DRAM Part Number	DRAM Density	DRAM Width	DRAM Date Code	Die Revision
Ramaxel	RMUA5190MJ86H9F-3200	4 GB	C0	Micron	MT40A512M16TB-062E:J	8 Gb	X16	1930	J
Samsung	M378A4G43AB2-CVF	32 GB	B2	Samsung	K4AAG085WA-BCVF	16 Gb	x8	1934	A
Samsung	M378A2K43DB1-CVF	16 GB	B1	Samsung	K4A8G085WD-BCVF	8 Gb	x8	1922	D
Samsung	M378A1K43DB2-CVF	8 GB	A2	Samsung	K4A8G085WD-BCVF	8 Gb	x8	1922	D
Samsung	M378A1G44AB0-CWE	8 GB	C0	Samsung	K4AAG165WA-BCWE	16 Gb	X16	1943	A
Samsung	M378A5244CB0-CVF	4 GB	C0	Samsung	K4A8G165WC-BCVF	8 Gb	X16	1946	C
Samsung	M378A5244CB0-CWE	4 GB	C0	Samsung	K4A8G165WC-BCWE	8 Gb	X16	1946	C
SK Hynix	HMAA4GU6AJR8N-WMN0	32 GB	B2	SK Hynix	H5ANAG8NAJR-WMC	16 Gb	x8	1910	A
SK Hynix	HMAA4GU6CJR8N-XNN0	32 GB	B2	SK Hynix	H5ANAG8NCJR-XNC	16 Gb	X8	2025	C
SK Hynix	HMAA2GU6AJR8N-WMN0	16 GB	A3	SK Hynix	H5ANAG8NAJR-WMC	16 Gb	x8	1910	A
SK Hynix	HMA82GU6DJR8N-WMN0	16 GB	B2	SK Hynix	H5AN8G8NDJR-WMC	8 Gb	x8	1924	D
SK Hynix	HMA82GU6CJR8N-WMN0	16 GB	B2	SK Hynix	H5AN8G8NCJR-WMC	8 Gb	x8	1931	C
SK Hynix	HMAA2GU6CJR8N-XNN0	16 GB	A3	SK Hynix	H5ANAG8NCJR-XNC	16 Gb	X8	2025	C
SK Hynix	HMA81GU6DJR8N-WMN0	8 GB	A2	SK Hynix	H5AN8G8NDJR-WMC	8 Gb	x8	1927	D
SK Hynix	HMA81GU6CJR8N-WMN0	8 GB	A2	SK Hynix	H5AN8G8NCJR-WMC	8 Gb	x8	1924	C
SK Hynix	HMAA1GU6CJR6N-XNN0	8 GB	C0	SK Hynix	H5ANAG6NCJR-XNC	16 Gb	X16	1944	C
SK Hynix	HMA851U6CJR6N-XNN0	4 GB	C0	SK Hynix	H5AN8G6NCJR-XNC	8 Gb	X16	1908	C



## DDR4 2933 ECC UDIMM, 2DIMM/ch, 2 channels, tested at 1.2V Vdd

DIMM Supplier	DIMM Part Number	DIMM Size	Raw Card	DRAM Supplier	DRAM Part Number	DRAM Density	DRAM Width	DRAM Date Code	Die Revision
Kingston	KSM32ED8/32HA	32 GB	E1	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2026	A
Kingston	KSM29ED8/16HD	16 GB	E1	SK Hynix	H5AN8G8NDJR-XNC	8 Gb	x8	1949	D
Kingston	KSM29ES8/16HA	16 GB	D2	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2008	A
Kingston	KSM32ES8/16HA	16 GB	D2	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2026	A
Kingston	KSM32ES8/16ME	16 GB	D2	Micron	MT40A2G8JC-062E:E	16 Gb	x8	2018	E
Kingston	KSM29ES8/8HD	8 GB	D2	SK Hynix	H5AN8G8NDJR-XNC	8 Gb	x8	1949	D
Micron	MTA18ASF4G72AZ-3G2B1	32 GB	E1	Micron	MT40A2G8VA-062E:B	16 Gb	X8	1936	B
Micron	MTA9ASF2G72AZ-3G2B1	16 GB	D2	Micron	MT40A2G8VA-062E:B	16 Gb	X8	1948	B
Samsung	M391A4G43AB1-CVF	32 GB	E1	Samsung	K4AAG085WA-BCVF	16 Gb	X8	1943	A
Samsung	M391A4G43AB1-CWE	32 GB	E1	Samsung	K4AAG085WA-BCWE	16 Gb	X8	2004	A
Samsung	M391A2K43DB1-CVF	16 GB	E1	Samsung	K4A8G085WD-BCVF	8 Gb	X8	1922	D
Samsung	M391A2K43DB1-CWE	16 GB	E1	Samsung	K4A8G085WD-BCWE	8 Gb	x8	2004	D
Samsung	M391A1K43DB2-CVF	8 GB	D2	Samsung	K4A8G085WD-BCVF	8 Gb	X8	1922	D
Samsung	M391A1K43DB2-CWE	8 GB	D2	Samsung	K4A8G085WD-BCWE	8 Gb	X8	1949	D
SK Hynix	HMAA4GU7AJR8N-XNT0	32 GB	E1	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2012	A
SK Hynix	HMAA4GU7AJR8N-WMT0	32 GB	E1	SK Hynix	H5ANAG8NAJR-WMC	16 Gb	x8	1952	A
SK Hynix	HMA82GU7DJR8N-WMT0	16 GB	E1	SK Hynix	H5AN8G8NDJR-XNC	8 Gb	X8	1939	D

<b>DIMM Supplier</b>	<b>DIMM Part Number</b>	<b>DIMM Size</b>	<b>Raw Card</b>	<b>DRAM Supplier</b>	<b>DRAM Part Number</b>	<b>DRAM Density</b>	<b>DRAM Width</b>	<b>DRAM Date Code</b>	<b>Die Revision</b>
Kingston	KSM32ED8/32HA	32 GB	E1	SK Hynix	H5ANAG8NAJR-XNC	16 Gb	x8	2026	A
SK Hynix	HMA81GU7DJR8N-WMT0	8 GB	D2	SK Hynix	H5AN8G8NDJR-WMC	8 Gb	X8	1932	D



## Approved Test Labs

The following test labs have the capability of performing ATE and system-level validation testing:

### **Advanced Validation Labs**

Attn: Rhonda Duda  
Advanced Validation Labs  
17665B Newhope Street  
Fountain Valley, CA 92708  
USA Phone: 714-438-2787  
<mailto:rduda@validationlabs.com>