

Intel MIO

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LPDDR4/x SDRAM Validation Results

Listed below are validation results from a small sample of LPDDR4/x SDRAMs tested on Intel client reference platforms (DRAM down testing). 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

LPDDR4-3733/4266 (200ball) tested on ATE at native frequency and downbinned to 2400Mbps at the platform (1.1V)

DRAM supplier	DRAM part number	Rated speedbin	PKG size	Die per Ch	Ranks per Ch	PKG stacking	PKG width	Die rev	Date code
Micron	MT53B256M32D1NP-053 WT:C	3733Mbps	8Gb (1GB)	4Gb x16	1R	DDP	x32	C	1650
Micron	MT53E512M32D2NP-046 WT:E	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	E	1828
Micron	MT53E1G32D4NQ-046 WT:E	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	E	1912
Samsung	K4F8E3S4HD-MGCL	4266Mbps	8Gb (1GB)	4Gb x16	1R	DDP	x32	D	1919
Samsung	K4F6E3S4HM-MGCJ	3733Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	M	1734
Samsung	K4FBE3D4HM-MGCJ	3733Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	M	1737
SK hynix	H9HCNNN8KUMLHR-NME	3733Mbps	8Gb (1GB)	4Gb x16	1R	DDP	x32	M	1835
SK hynix	H9HCNNNBPUMMLHR-NME	3733Mbps	16Gb (2GB)	4Gb x16	2R	QDP	x32	M	1834
Nanya	NT6AN256T32AV-J2	3733Mbps	8Gb (1GB)	4Gb x16	1R	DDP	x32	A	1947
Nanya	NT6AN512T32AV-J2	3733Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	A	2021

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LPDDR4-3733/4266 (200ball) tested on ATE at native frequency and downbinned to 3733Mbps at the platform (1.1V)

DRAM supplier	DRAM part number	Rated speedbin	PKG size	Die per Ch	Ranks per Ch	PKG stacking	PKG width	Die rev	Date code
Micron	MT53E1G32D4NQ-046 WT:E	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	E	1912
Micron	MT53E512M32D2NP-046 WT:E	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	E	1828
Samsung	K4F6E3S4HM-MGCL	3733Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	M	1734

LPDDR4x-3733/4266 (200ball) tested on ATE at native frequency and downbinned to 3733Mbps at the platform (0.6V)

DRAM supplier	DRAM part number	Rated speedbin	PKG size	Die per Ch	Ranks per Ch	PKG stacking	PKG width	Die rev	Date code
Micron	MT53E512M32D2NP-046 WT:E	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	E	1828
Micron	MT53E1G32D4NQ-046 WT:E	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	E	1744
Micron	MT53E512M32D2NP-046 WT:F	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	F	1926
Micron	MT53E1G32D4NQ-046 WT:F	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	F	2008
Micron	MT53E2G32D8QD-046 WT:E	4266Mbps	64Gb (8GB)	8Gb x8	2R	ODP	x32	E	1740
Samsung	K4U6E3S4AA-MGCL	3733Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	A	1901
Samsung	K4UBE3D4AA-MGCL	3733Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	A	1922

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SK hynix	H9HCNNNBKMALHR-NEE	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	A	1836
SK hynix	H9HCNNNCPMALHR-NEE	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	A	1836
SK hynix	H9HCNNNFAMALTR-NME	3733Mbps	64Gb (8GB)	8Gb x8	2R	ODP	x32	A	1823
SK hynix	H9HCNNNBKMMLXR-NEE	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	M	2027
SK hynix	H9HCNNNCPMMLXR-NEE	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	M	2025
SK hynix	H9HCNNNFAMMLXR-NEE	4266Mbps	64Gb (8GB)	8Gb x8	2R	ODP	x32	M	2025
Nanya	NT6AP256T32AV-J1	4266Mbps	8Gb (1GB)	4Gb x16	1R	DDP	x32	A	2032

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LPDDR4x-4266 (200ball) tested on ATE and platform at native frequency (0.6V)

DRAM supplier	DRAM part number	Rated speedbin	PKG size	Die per Ch	Ranks / Ch	PKG stacking	PKG width	Die rev	Date code
Micron	MT53E512M32D2NP-046 WT:E	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	E	1938
Micron	MT53E512M32D2NP-046 WT:F	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	F	1926
Micron	MT53E1G32D4NQ-046 WT:E	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	E	1942
Micron	MT53E1G32D4NQ-046 WT:F	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	F	2008
Micron	MT53E1G32D2NP-046 WT:A	4266Mbps	32Gb (4GB)	16Gb x16	1R	DDP	x32	A	2008
Micron	MT53E2G32D4NQ-046 WT:A	4266Mbps	64Gb (8GB)	16Gb x16	2R	QDP	x32	A	1938
Micron	MT53E2G32D8QD-046 WT:E	4266Mbps	64Gb (8GB)	8Gb x8	2R	ODP	x32	E	1928
Samsung	K4U6E3S4AA-MGCR	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	A	2019
Samsung	K4UBE3D4AA-MGCR	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	A	2019
SK hynix	H9HCNNNBKMMLXR-NEE	4266Mbps	16Gb (2GB)	8Gb x16	1R	DDP	x32	M	2027
SK hynix	H9HCNNNCPMMLXR-NEE	4266Mbps	32Gb (4GB)	8Gb x16	2R	QDP	x32	M	2025
SK hynix	H9HCNNNFAMMLXR-NEE	4266Mbps	64Gb (8GB)	8Gb x8	2R	ODP	x32	M	2025

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LPDDR4x-3733/4266 (432ball) tested on ATE at native frequency (0.6V)

DRAM supplier	DRAM part number	Rated speedbin	PKG size	Die per Ch	Ranks per Ch	PKG stacking	PKG width	Die rev	Date code
Micron	MT53E512M64D4NW-046 WT:E	4266Mbps	32Gb (4GB)	8Gb x16	1R	QDP	x64	E	1742
Micron	MT53E1G64D8NW-046 WT:E	4266Mbps	64Gb (8GB)	8Gb x16	2R	ODP	x64	E	1748
Micron	MT53D512M64D4NW-046 WT:F	4266Mbps	32Gb (4GB)	8Gb x16	1R	QDP	x64	F	1944
Micron	MT53D1G64D4NW-046 WT:A	4266Mbps	64Gb (8GB)	16Gb x16	1R	QDP	x64	A	2002
Samsung	K3UH5H50AM-JGCL	3733Mbps	32Gb (4GB)	8Gb x16	1R	QDP	x64	A	1907
Samsung	K3UH7H70AM-JGCL	3733Mbps	64Gb (8GB)	8Gb x16	2R	ODP	x64	A	1922
Samsung	K3UH5H50AM-JGCR	4266Mbps	32Gb (4GB)	8Gb x16	1R	QDP	x64	A	2022
Samsung	K3UH7H70AM-JGCR	4266Mbps	64Gb (8GB)	8Gb x16	2R	ODP	x64	A	2022
SK hynix	H9HCNNNFBMBLPR-NEE	4266Mbps	64Gb (8GB)	8Gb x16	2R	ODP	x64	B	1944
SK hynix	H9HCNNNCRMBLPR-NEE	4266Mbps	32Gb (4GB)	8Gb x16	1R	QDP	x64	B	2026

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LPDDR4x-4266 (556ball) tested on ATE and platform at native frequency (0.6V)

DRAM supplier	DRAM part number	Rated speedbin	PKG size	Die per Ch	Ranks per Ch	PKG stacking	PKG width	Die rev	Date code
Micron	MT53D1G64D8SQ-046 WT:E	4266Mbps	64Gb (8GB)	8Gb x16	2R	ODP	x64	E	1934
Micron	MT53D512M64D4RQ-046 WT:E	4266Mbps	32Gb (4GB)	8Gb x16	1R	QDP	x64	E	1850
Micron	MT53E1G64D4SQ-046 WT:A	4266Mbps	64Gb (8GB)	16Gb x16	1R	QDP	x64	A	1948
Micron	MT53E512M64D4RQ-046 WT:F	4266Mbps	32Gb (4GB)	8Gb x16	1R	QDP	x64	F	2022
SK hynix	H9HKNNNCRMBVAR-NEH	4266Mbps	32Gb (4GB)	8Gb x16	1R	QDP	x64	B	2001

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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

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