

## 4L

## DDR4 2133 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								1 DIMM	2 DIMM	4 DIMM
<b>ADATA</b>	AD4U2133W4G15-B	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>ADATA</b>	AD4U2133W8G15	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>Apacer</b>	78.B1GM3.AF00B	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>Apacer</b>	78.C1GM3.AF10B	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>AVEXIR</b>	AVD4U21331504G-4M	4GB	SS	AVEXIR	512X8DDR4	15-15-15-35	1.2	•	•	•
<b>CENTURY MICRO INC</b>	CD8G-D4U2133	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>CENTURY MICRO INC</b>	CK8GX4-D4U2133	32GB(8GB*4)	DS	SK hynix	H5AN4G8NMFRTFC	15-15-15-35	1.2	•	•	•
<b>CORSAIR</b>	CMD16GX4M4B2133C10(Ver3.20)	16GB ( 4x 4GB )	SS	-	-	10-12-12-31	1.35	•	•	•
<b>CORSAIR</b>	CMK16GX4M4A2133C13(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	13-15-15-28	1.2	•	•	•
<b>CORSAIR</b>	CMK32GX4M4A2133C13(Ver4.23)(XMP)	32GB ( 4x 8GB )	DS	-	-	13-15-15-28	1.2	•	•	•
<b>CORSAIR</b>	CMK64GX4M8A2133C13(Ver4.23)(XMP)	64GB ( 8x 8GB )	DS	-	-	13-15-15-28	1.2	•	•	•
<b>CORSAIR</b>	CMV4GX4M1A2133C15	4GB	SS	-	-	15-15-15-36	1.2	•	•	•
<b>CORSAIR</b>	CMV8GX4M1A2133C15	8GB	DS	-	-	15-15-15-36	1.2	•	•	•
<b>CORSAIR</b>	CMK32GX4M4A2133C15(Ver5.29)	32GB ( 4x 8GB )	DS	-	-	15-15-15-36	1.2	•	•	•
<b>CORSAIR</b>	CMK32GX4M4A2133C15(Ver3.20)	32GB ( 4x 8GB )	DS	-	-	15-15-15-36	1.2	•	•	•
<b>Crucial</b>	CT4G4DFS8213.8FA1	4GB	SS	Micron	D9RGQ	15-15-15-37	1.2	•	•	•
<b>Crucial</b>	CT8G4DFD8213.16FA1	8GB	DS	Micron	D9RGQ	15-15-15-37	1.2	•	•	•
<b>Crucial</b>	CT8G4DFD8213.C16FAD11	16GB ( 2x 8GB )	DS	Micron	D9RGQ	15-15-15-37	1.2	•	•	•
<b>Foxteonn</b>	FEU4GN51208JC2133F	4GB	SS	Nanya	NT5AD512M8B1-FM	15-15-15-37	1.2	•	•	•
<b>G.SKILL</b>	F4-2133C15Q-16GRR	16GB ( 4x 4GB )	SS	-	-	15-15-15-35	1.2	•	•	•
<b>G.SKILL</b>	F4-2133C15Q-32GRR	32GB ( 4x 8GB )	DS	-	-	15-15-15-35	1.2	•	•	•
<b>GelL</b>	GPR416GB2133C15QC	16GB ( 4x4GB )	SS	-	-	15-15-15-36	1.2	•	•	•
<b>Kingston</b>	KVR21N15D8/8	8GB	DS	SK hynix	H5AN4G8NMFRTFC	15-15-15-37	1.2	•	•	•
<b>Kingston</b>	KVR21N15S8/4	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-37	1.2	•	•	•
<b>KLEVV</b>	KM4C8GX4N-2133-15-15-15-35-0	8GB	DS	-	-	15-15-15-35	1.2	•	•	•
<b>KLEVV</b>	KM4C4GX4N-2133-15-15-15-35-0	4GB	SS	-	-	15-15-15-35	1.2	•	•	•
<b>KLEVV</b>	KM4C8GX4N-2133-15-15-15-35-1	8GB	DS	-	-	15-15-15-35	1.2	•	•	•
<b>KLEVV</b>	KM4C4GX4N-2133-15-15-15-35-1	4GB	SS	-	-	15-15-15-35	1.2	•	•	•
<b>Micron</b>	MTA16ATF1G64AZ-2G1A2	8GB	DS	Micron	D9RGQ	15-15-15-37	1.2	•	•	•
<b>Micron</b>	MTA8ATF51264AZ-2G1A2	4GB	SS	Micron	D9RGQ	15-15-15-37	1.2	•	•	•
<b>Panram</b>	PUD42133C134G4NJW	16GB ( 4x 4GB )	SS	-	-	13-13-13-35	1.2	•	•	•
<b>Panram</b>	PUD42133C138G4NJW	32GB ( 4x 8GB )	DS	-	-	13-13-13-35	1.2	•	•	•
<b>Panram</b>	PUD42133C154G2VS	8GB ( 2x 4GB )	SS	SK Hynix	H5AN4GBNMFRTFC	15-15-15-36	1.2	•	•	•
<b>panram</b>	PUD42133C154GNJK	4GB	SS	-	-	15-15-15-36	1.2	•	•	•
<b>Panram</b>	PUD42133C158G2VS	16GB ( 2x 8GB )	DS	SK Hynix	H5AN4GBNMFRTFC	15-15-15-36	1.2	•	•	•
<b>panram</b>	PUD42133C158GNJK	8GB	DS	-	-	15-15-15-36	1.2	•	•	•
<b>Samsung</b>	M378A1G43DB0-CPB	8GB	DS	Samsung	K4A4G085WD	15-15-15-36	1.2	•	•	•
<b>Samsung</b>	M378A5143DB0-CPB	4GB	SS	Samsung	K4A4G085WD	15-15-15-36	1.2	•	•	•
<b>SanMax</b>	SMD-4G28HP-21P	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-37	1.2	•	•	•
<b>SanMax</b>	SMD-8G28HP-21P	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-37	1.2	•	•	•
<b>SK Hynix</b>	HMA82GU6MFR8N-TF	16GB	DS	SK Hynix	H5AN8G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>SK Hynix</b>	HMA41GU6MFR8N-TF	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-37	1.2	•	•	•

<b>SK Hynix</b>	HMA451U6MFR8N	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>SUPER TALENT</b>	FBU2B008GM	8GB	DS	Micron	D9RGQ	15-15-15-36	1.2	•	•	•
<b>Team</b>	TED44GM2133C15ABK	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>Team</b>	TED48GM2133C15BK	8GB	DS	SK hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
<b>Team</b>	T4D4C10S61163	8GB	DS	Samsung	K4A4G085WD	15-15-15-36	1.2	•	•	•
<b>Transcend</b>	TS1GLH64V1H	8GB	DS	Samsung	K4A4G085WD	15-15-15-37	1.2	•	•	•
<b>Transcend</b>	TS512MLH64V1H	4GB	SS	Samsung	K4A4G085WD	15-15-15-37	1.2	•	•	•
<b>UMAX</b>	84G44G93MC-21OMCALGF15	4GB	SS	Micron	D9RGQ	15-15-15-36	1.2	•	•	•
<b>UMAX</b>	84G48G93MC-21OMCGNGF15	8GB	DS	Micron	D9RGQ	15-15-15-36	1.2	•	•	•

### DDR4 2400 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	MM socket support (Optional)		
								1 DIMM	2 DIMM	4 DIMM
<b>AVEXIR</b>	AVD4U24001604G-4CIR(XMP)	4GB	SS	-	-	16-16-16-36	1.2	•	•	•
<b>AVEXIR</b>	AVD4U24001608G-4M	32GB ( 4x 8GB )	DS	SK Hynix	H5AN4G8NMFRTFC	16-16-16-39	1.2	•	•	•
<b>AVEXIR</b>	AVD4U24001608G-4M(XMP)	32GB ( 4x 8GB )	DS	SK Hynix	H5AN4G8NMFRTFC	16-16-16-36	1.2	•	•	•
<b>ADATA</b>	AX4U2400W4G16-QRZ(XMP)	32GB ( 4x 8GB )	SS	-	-	16-16-16-39	1.2	•	•	•
<b>ADATA</b>	AX4U2400W8G16-QRZ(XMP)	32GB ( 4x 8GB )	DS	-	-	16-16-16-39	1.2	•	•	•
<b>ADATA</b>	AD4U2400W4G17-B	4GB	SS	SK Hynix	H5AN4G8NAFRTFC	15-15-15-35	1.2	•	•	•
<b>ADATA</b>	AD4U2400W8G17-B	8GB	DS	SK Hynix	H5AN4G8NAFRTFC	15-15-15-35	1.2	•	•	•
<b>Apacer</b>	78.B1GMS.4050B	4GB	SS	Samsung	K4A4G085WD	17-17-17-39	-	•	•	•
<b>Apacer</b>	78.C1GMS.4010B	8GB	DS	Samsung	K4A4G085WD	17-17-17-39	-	•	•	•
<b>CORSAIR</b>	CMD16GX4M4A2400C14(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	14-16-16-31	1.2	•	•	•
<b>CORSAIR</b>	CMD32GX4M4A2400C14(Ver4.23)(XMP)	32GB ( 4x 8GB )	DS	-	-	14-16-16-31	1.2	•	•	•
<b>CORSAIR</b>	CMK16GX4M4A2400C14(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	14-16-16-31	1.2	•	•	•
<b>CORSAIR</b>	CMK32GX4M4A2400C14(Ver4.23)(XMP)	32GB ( 4x 8GB )	DS	-	-	14-16-16-31	1.2	•	•	•
<b>CORSAIR</b>	CMK64GX4M4A2400C14(Ver4.31)	64GB ( 4x 16GB )	DS	-	-	14-16-16-31	1.2	•	•	•
<b>Crucial</b>	BLS4G4D240FSA.8FAD	4GB	SS	-	-	16-16-16-40	1.2	•	•	•
<b>crucial</b>	BLS4G4D240FSA.8FAR(XMP)	4GB	SS	-	-	16-16-16-40	1.2	•	•	•
<b>Crucial</b>	BLS8G4D240FSA.16FAD	32GB (4x 8GB )	DS	-	-	16-16-16-40	1.2	•	•	•
<b>Crucial</b>	BLS8G4D240FSA.16FADG(XMP)	16GB ( 2x 8GB )	DS	-	-	16-16-16-39	1.2	•	•	•
<b>crucial</b>	BLS8G4D240FSA.16FAR(XMP)	8GB	DS	-	-	16-16-16-40	1.2	•	•	•
<b>Crucial</b>	CT16G4DFD824A.16FB1	16GB	DS	Micron	D9TBH	17-17-17-39	1.2	•	•	•
<b>Crucial</b>	CT16G4RFS424A.18FA1	16GB	DS	Micron	D9SRK	15-15-15-35	1.2	•	•	•
<b>Crucial</b>	CT8G4DFS824A.8FB1	8GB	SS	-	-	17-17-17-39	1.2	•	•	•
<b>Foxteonn</b>	FEU8GN51208KC2400H	8GB	DS	Nanya	NT5AD512M8B1-FM	17-17-17-39	1.2	•	•	•
<b>G.SKILL</b>	F4-2400C14Q2-128GRK(XMP)	128GB ( 8x 16GB )	DS	-	-	14-14-14-34	1.2	•	•	•
<b>G.SKILL</b>	F4-2400C14Q2-128GRK(XMP)	128GB ( 8x 16GB )	DS	-	-	14-14-14-34	1.2	•	•	•
<b>G.SKILL</b>	F4-2400C15Q-16GRR	16GB ( 4x 4GB )	SS	-	-	15-15-15-35	1.2	•	•	•
<b>G.SKILL</b>	F4-2400C15Q2-128GRK(XMP)	128GB ( 8x 16GB )	DS	-	-	15-15-15-35	1.2	•	•	•
<b>G.SKILL</b>	F4-2400C15Q2-64GRK(XMP)	64GB ( 8x 8GB )	DS	-	-	15-15-15-35	1.2	•	•	•
<b>G.SKILL</b>	F4-2400C15Q-32GRR	32GB ( 4x 8GB )	DS	-	-	15-15-15-35	1.2	•	•	•
<b>GelL</b>	GLR464GB2400C14QC(XMP)	16GB ( 4x 4GB )	DS	-	-	14-14-14-35	1.2	•	•	•
<b>GelL</b>	GPR416GB2400C15QC(XMP)	16GB ( 4x 4GB )	SS	-	-	15-15-15-35	1.2	•	•	•
<b>GelL</b>	GPR432GB2400C15QC(XMP)	32GB ( 4x 8GB )	DS	-	-	15-15-15-35	1.2	•	•	•
<b>Kingston</b>	HX424C12PB2K4/16	16GB ( 4x 4GB )	SS	-	-	12-13-13-35	1.2	•	•	•
<b>Kingston</b>	HX424C12SB2/4(XMP)	4GB	SS	-	-	12-14-14-35	1.35	•	•	•
<b>Kingston</b>	HX424C12SB2/8(XMP)	8GB	DS	-	-	12-14-14-35	1.35	•	•	•

Kingston	HX424C12SB2K2/16(XMP)	16GB ( 2x 8GB )	DS	-	-	12-14-14-35	1.35	•	•	•
Kingston	HX424C12SB2K2/16(XMP)	16GB ( 2x 8GB )	DS	Nanya	NT5AD512M8B1-GN	12-14-14-35	1.35	•	•	•
Kingston	HX424C12SB2K4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	12-14-14-35	1.35	•	•	•
Kingston	HX424C12SB2K4/32(XMP)	32GB ( 4x 8GB )	DS	-	-	12-14-14-35	1.35	•	•	•
Kingston	HX424C12SB2K4/32(XMP)	32GB ( 4x 8GB )	DS	Nanya	NT5AD512M8B1-GN	12-14-14-35	1.35	•	•	•
Kingston	HX424C15B2K4/32(XMP)	32GB ( 4x 8GB )	SS	-	-	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FB/4(XMP)	4GB	SS	-	-	15-15-5-35	1.2	•	•	•
Kingston	HX424C15FB/8(XMP)	8GB	SS	-	-	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FB/8(XMP)	8GB	DS	-	-	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FBK2/16	16GB ( 2x 8GB )	DS	Nanya	NT5AD512M8B1-GN	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FBK2/16(XMP)	32GB ( 2x 16GB )	DS	-	-	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FBK2/8(XMP)	8GB ( 2x 4GB )	SS	-	-	15-15-5-35	1.2	•	•	•
Kingston	HX424C15FBK4/16	16GB ( 4x4GB )	SS	-	-	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FBK4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	15-15-5-35	1.2	•	•	•
Kingston	HX424C15FBK4/32	32GB ( 4x 8GB )	DS	-	-	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FBK4/32	32GB ( 4x 8GB )	DS	Nanya	NT5AD512M8B1-GN	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FBK4/32(XMP)	32GB ( 4x 8GB )	DS	-	-	15-15-15-35	1.2	•	•	•
Kingston	HX424C15FBK4/64(XMP)	64GB ( 4x 16GB )	DS	-	-	15-15-15-35	1.2	•	•	•
Panram	PUD42400C154G4NJW	16GB ( 4x 4GB )	SS	-	-	15-15-15-35	1.2	•	•	•
Panram	PUD42400C158G4NJW	32GB ( 4x 8GB )	DS	-	-	15-15-15-35	1.2	•	•	•
Team	TED44GM2400C16BK	4GB	SS	Samsung	K4A4G085WD	16-16-16-39	1.2	•	•	•
Team	TED48GM2400C16BK	8GB	DS	Samsung	K4A4G085WD	16-16-16-39	1.2	•	•	•
V-color	TD8G16C17-UH	8GB	DS	V-color	A4G8H-24CS	17-17-17-39	1.2	•	•	•
V-color	TD4G8C17-UH	4GB	SS	V-color	DW3J0460HM	15-15-15-36	1.2	•	•	•

### DDR4 2666 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								1 DIMM	2 DIMM	4 DIMM
AVEXIR	AVD4U26661504G-4CIR(XMP)	4GB	SS	-	-	15-15-15-35	1.2	•	•	•
AVEXIR	AVD4U26661608G-4CIR(XMP)	32GB ( 8x 4GB )	DS	-	-	16-16-16-36	1.2	•	•	•
CORSAIR	CMD128GX4M8A2666C15(Ver4.31)(XMP)	128GB (8x 16GB )	DS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD16GX4M2A2666C15(Ver4.23)(XMP)	16GB ( 2x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD16GX4M4A2666C15(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD16GX4M4A2666C16(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMD16GX4M4A2666C16(Ver5.29)(XMP)	16GB ( 4x 4GB )	SS	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMD32GX4M4A2666C15(Ver4.23)(XMP)	32GB ( 4x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD32GX4M4A2666C15(Ver5.29)	32GB ( 4x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD32GX4M4A2666C16(Ver4.23)(XMP)	32GB ( 4x 8GB )	DS	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMD64GX4M8A2666C15(Ver4.23)(XMP)	64GB ( 8x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD8GX4M2A2666C15(Ver4.23)(XMP)	8GB ( 2x 4GB )	DS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMK16GX4M2A2666C16(Ver5.29)(XMP)	16GB ( 2x 8GB )	DS	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMK16GX4M4A2666C15(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMK16GX4M4A2666C15(Ver5.29)	16GB ( 4x 4GB )	SS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMK16GX4M4A2666C16(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMK16GX4M4A2666C16(Ver5.29)(XMP)	16GB ( 4x 4GB )	SS	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMK32GX4M2A2666C16(Ver4.31)(XMP)	32GB ( 2x 16GB )	DS	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMK32GX4M4A2666C15(Ver4.23)(XMP)	32GB ( 4x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMK32GX4M4A2666C15(Ver5.29)(XMP)	32GB ( 4x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	•

<b>CORSAIR</b>	CMK32GX4M4A2666C16(Ver5.29)(XMP)	32GB ( 4x 8GB )	DS	-	-	16-16-18-35	1.2			•
<b>CORSAIR</b>	CMK32GX4M4A2666C16R(Ver4.23)(XMP)	32GB ( 4x 8GB )	DS	-	-	16-18-18-35	1.2	•	•	
<b>CORSAIR</b>	CMK64GX4M4A2666C16(Ver4.31)	64GB ( 4x 16GB )	DS	-	-	16-18-18-36	1.2	•	•	•
<b>CORSAIR</b>	CMD64GX4M8A2666C15(Ver4.24)(XMP)	64GB ( 8x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	•
<b>CORSAIR</b>	CMK64GX4M4A2666C16(Ver4.31)(XMP)	64GB ( 4x 16GB )	DS	-	-	16-18-18-35	1.2	•	•	•
<b>Crucial</b>	BLE4G4D26AFEA.8FAD (XMP)	8GB	SS	-	-	16-17-17-36	1.2	•	•	
<b>Crucial</b>	BLE8G4D26AFEA.16FAD(XMP)	16GB	DS	-	-	16-17-17-36	1.2	•	•	
<b>Crucial</b>	BLT4G4D26AFTA.8FADG(XMP)	16GB ( 4x4GB )	SS	-	-	16-17-17-36	1.2	•	•	•
<b>Crucial</b>	BLT4G4D26AFTA.8FADG(XMP)	4GB	SS	-	-	16-17-17-36	1.2	•	•	
<b>Crucial</b>	BLT8G4D26AFTA.16FAD(XMP)	32GB ( 4x 8GB )	DS	-	-	16-17-17-36	1.2	•	•	•
<b>Crucial</b>	BLT8G4D26AFTA.16FAD(XMP)	8GB	DS	-	-	16-17-17-36	1.2	•	•	
<b>G.SKILL</b>	F4-2666C15Q-16GRR(XMP)	16GB ( 4x 4GB )	SS	-	-	15-15-15-35	1.2	•	•	•
<b>G.SKILL</b>	F4-2666C15Q-32GRR(XMP)	32GB ( 4x 8GB )	DS	-	-	15-15-15-35	1.2	•	•	•
<b>G.SKILL</b>	F4-2666C16Q2-64GRB(XMP)	64GB ( 8x 8GB )	DS	-	-	16-16-16-36	1.2	•	•	•
<b>Kingston</b>	HX426C13SB2/4(XMP)	4GB	SS	-	-	13-15-15-39	1.35	•	•	
<b>Kingston</b>	HX426C13SB2/8(XMP)	8GB	DS	-	-	13-15-15-39	1.35	•	•	
<b>Kingston</b>	HX426C13SB2K2/16(XMP)	16GB ( 2x 8GB )	DS	-	-	13-15-15-39	1.35	•	•	
<b>Kingston</b>	HX426C13SB2K2/16(XMP)	16GB ( 2x 8GB )	DS	Nanya	NT5AD512M8B1-GN	13-15-15-39	1.35	•	•	
<b>Kingston</b>	HX426C13SB2K2/8(XMP)	8GB ( 2x 4GB )	SS	-	-	13-15-15-39	1.35	•	•	
<b>Kingston</b>	HX426C13SB2K4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	13-15-15-39	1.35	•	•	•
<b>Kingston</b>	HX426C13SB2K4/32(XMP)	32GB ( 4x 8GB )	DS	-	-	13-15-15-39	1.35	•	•	•
<b>Kingston</b>	HX426C13SB2K4/32(XMP)	32GB ( 4x 8GB )	DS	Nanya	NT5AD512M8B1-GN	13-15-15-39	1.35	•	•	•
<b>Kingston</b>	HX426C15FB/4(XMP)	4GB	SS	-	-	15-17-17-35	1.2	•	•	
<b>Kingston</b>	HX426C15FB/8(XMP)	8GB	DS	-	-	15-17-17-35	1.2	•	•	
<b>Kingston</b>	HX426C15FBK2/16(XMP)	16GB ( 2x 8GB )	DS	-	-	15-15-17-35	1.2	•	•	
<b>Kingston</b>	HX426C15FBK2/16(XMP)	16GB ( 2x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	
<b>Kingston</b>	HX426C15FBK2/8(XMP)	8GB ( 2x 4GB )	SS	-	-	15-17-17-35	1.2	•	•	
<b>Kingston</b>	HX426C15FBK4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	15-17-17-35	1.2	•	•	•
<b>Kingston</b>	HX426C15FBK4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	15-17-17-35	1.2	•	•	•
<b>Kingston</b>	HX426C15FBK4/32	32GB ( 4x 8GB )	DS	-	-	15-15-17-35	1.2	•	•	•
<b>Kingston</b>	HX426C15FBK4/32(XMP)	32GB ( 4x 8GB )	DS	-	-	15-17-17-35	1.2	•	•	•
<b>Kingston</b>	HX426C15SBK4/64(XMP)	64GB ( 4x 16GB )	DS	-	-	15-15-15-35	1.2	•	•	•
<b>KLEVV</b>	KM4C8GX4N-2666-15-15-15-35-0	8GB	DS	-	-	15-15-15-35	1.2	•	•	
<b>KLEVV</b>	KM4C4GX4N-2666-15-15-15-35-0	4GB	SS	-	-	15-15-15-35	1.2	•	•	
<b>KLEVV</b>	KM4C8GX4N-2666-15-15-15-35-1	8GB	DS	-	-	15-15-15-35	1.2	•	•	
<b>KLEVV</b>	KM4C4GX4N-2666-15-15-15-35-1	4GB	SS	-	-	15-15-15-35	1.2	•	•	
<b>Team</b>	TCD44G2666C15ABK(XMP)	4GB	SS	Samsung	K4A4G085WD	15-15-15-35	1.2	•	•	
<b>Team</b>	TCD48G2666C15ABK(XMP)	32GB(4x 8GB)	DS	Team	TCD48G2666C15ABK	15-15-15-35	1.2	•	•	•

#### DDR4 2800 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
								1 DIMM	2 DIMM	4 DIMM
<b>ADATA</b>	AX4U2800W4G17	32GB ( 8x 4GB )	DS	-	-	17-17-17-36	1.2	•	•	•
<b>ADATA</b>	AX4U2800W8G17	8GB	DS	-	-	15-15-15-36	1.2	•	•	
<b>ADATA</b>	AX4U2800316G16(XMP)	16GB	DS	-	-	16-16-16-36	1.2	•	•	
<b>ADATA</b>	AX4U2800W4G17-BRZ(XMP)	4GB	SS	-	-	17-17-17-36	1.2	•	•	
<b>ADATA</b>	AX4U2800W8G17-BRZ(XMP)	8GB	DS	-	-	17-17-17-36	1.2	•	•	

Apacer	78.BAGM8.AF20B(XMP)	4GB	SS	-	-	17-17-17-36	-	•	•
Apacer	78.CAGM8.AF30B(XMP)	8GB	DS	-	-	17-17-17-36	-	•	•
AVEXIR	AVD4U28001504G-4CIR(XMP)	4GB	SS	-	-	15-15-15-35	1.35	•	•
AVEXIR	AVD4U28001608G-4CIR(XMP)	32GB ( 8x 4GB )	DS	-	-	16-16-16-36	1.2	•	•
CORSAIR	CMD16GX4M4A2800C16(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	16-18-18-36	1.2	•	•
CORSAIR	CMD16GX4M4A2800C16(Ver5.29)	16GB ( 4x 4GB )	SS	-	-	16-18-18-36	1.2	•	•
CORSAIR	CMD32GX4M4A2800C15(Ver5.29)(XMP)	32GB ( 4x 8GB )	DS	-	-	2800-15-17-17-36	1.2	•	•
CORSAIR	CMD32GX4M4A2800C16(Ver5.29)(XMP)	32GB ( 4x 8GB )	DS	-	-	18-18-18-36	1.2	•	•
CORSAIR	CMK16GX4M4A2800C16(Ver4.23)(XMP)	16GB ( 4x 4GB )	SS	-	-	16-16-18-36	1.2	•	•
CORSAIR	CMK16GX4M4A2800C16(Ver5.29)	16GB ( 4x 4GB )	SS	-	-	16-18-18-36	1.2	•	•
CORSAIR	CMK32GX4M4A2800C16(Ver5.29)(XMP)	32GB ( 4x 8GB )	DS	-	-	16-18-18-36	1.2	•	•
CORSAIR	CMK64GX4M8B2800C14(Ver4.24)(XMP)	64GB ( 8x 8GB )	DS	-	-	14-16-16-36	1.35	•	•
G.SKILL	F4-2800C15Q2-64GRK(XMP)	64GB ( 8x 8GB )	DS	-	-	15-16-16-35	1.25	•	•
G.SKILL	F4-2800C16Q-16GRK(XMP)	16GB ( 4x 4GB )	SS	-	-	16-16-16-36	1.2	•	•
G.SKILL	F4-2800C16Q-16GRR(XMP)	16GB ( 4x 4GB )	SS	-	-	16-16-16-36	1.2	•	•
G.SKILL	F4-2800C16Q-32GRK(XMP)	32GB ( 4x 8GB )	DS	-	-	16-16-16-36	1.2	•	•
G.SKILL	F4-2800C16Q-32GRR(XMP)	32GB ( 4x 8GB )	DS	-	-	16-16-16-36	1.2	•	•
G.SKILL	F4-2800C14Q-64GVK(XMP)	64GB ( 4x 16GB )	DS	-	-	14-14-14-35	1.35	•	•
G.SKILL	F4-2800C15Q2-128GRKD(XMP)	128GB ( 8x 16GB )	DS	-	-	15-15-15-35	1.35	•	•
GelL	GPR416GB2800C16QC(XMP)	16GB ( 4x 4GB )	SS	-	-	16-16-16-36	1.2	•	•
GelL	GPR432GB2800C16QC(XMP)	32GB ( 4x 8GB )	DS	-	-	16-16-16-36	1.2	•	•
Kingston	HX428C14PBK4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	14-15-15-40-2	1.35	•	•
Kingston	HX428C14PBK8/64(XMP)	64GB (8x 8GB )	DS	-	-	14-15-15-39	1.35	•	•
Kingston	HX428C14SB2/4(XMP)	4GB	SS	-	-	14-16-16-39	1.35	•	•
Kingston	HX428C14SB2/8(XMP)	8GB	DS	-	-	14-16-16-39	1.35	•	•
Kingston	HX428C14SB2K2/16(XMP)	16GB ( 2x 8GB )	DS	-	-	14-16-16-39	1.35	•	•
Kingston	HX428C14SB2K2/8(XMP)	8GB ( 2x 4GB )	SS	-	-	14-16-16-39	1.35	•	•
Kingston	HX428C14SB2K4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	14-16-16-39	1.35	•	•
Kingston	HX428C14SB2K4/32(XMP)	32GB ( 4x 8GB )	DS	-	-	14-16-16-39	1.35	•	•
KLEVV	IMA451U6MFR8N-DG0(Ver1.05)(XMP)	4GB	SS	-	-	16-16-16-36	1.2	•	•
Panram	PUD42800C164G4NJW(XMP)	16GB ( 4x 4GB )	SS	-	-	16-18-18-36	1.25	•	•

#### DDR4 3000 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	MM socket support (Optional)	
								2 DIMM	4 DIMM
ADATA	AX4U3000W4G16-BWZ(XMP)	4GB	SS	-	-	16-16-16-36	1.35	•	
ADATA	AX4U3000W8G16-BWZ(XMP)	8GB	DS	-	-	16-16-16-36	1.35	•	
AVEXIR	AVD4U30001504G-4CIR(XMP)	16GB ( 4x 4GB )	DS	-	-	15-15-15-35	1.35	•	•
AVEXIR	AVD4U30001608G-4CIR(XMP)	32GB ( 4x 8GB )	DS	-	-	16-18-18-36	1.35	•	•
AVEXIR	AVD4UZ130001604G-4RD(XMP)	16GB ( 4x 4GB )	SS	-	-	16-18-18-36	1.35	•	•
AVEXIR	AVD4UZ130001608G-4RD(XMP)	32GB ( 4x 8GB )	SS	-	-	16-18-18-36	1.35	•	•
G.SKILL	F4-3000C15D-16GRR	16GB(8GB*2)	DS	Samsung	K4A4G085WD	15-15-15-35	1.35V	•	
G.SKILL	F4-3000C15D-16GRB	16GB(8GB*2)	DS	Samsung	K4A4G085WD	15-15-15-35	1.35V	•	
G.SKILL	F4-3000C15D-16GRK	16GB(8GB*2)	DS	Samsung	K4A4G085WD	15-15-15-35	1.35V	•	
G.SKILL	F4-3000C15Q-16GRR	16GB(4GB*4)	SS	Samsung	K4A4G085WD	15-15-15-35	1.35V	•	•
G.SKILL	F4-3000C15Q-16GRB	16GB(4GB*4)	SS	Samsung	K4A4G085WD	15-15-15-35	1.35V	•	•
G.SKILL	F4-3000C15Q-16GRK	16GB(4GB*4)	SS	Samsung	K4A4G085WD	15-15-15-35	1.35V	•	•
G.SKILL	F4-3000C15Q2-32GRK	32GB(4GB*8)	SS	Samsung	K4A4G085WD	15-15-15-35	1.35V	•	•

<b>G.SKILL</b>	F4-3000C15D-8GTZ	8GB(4GB*2)	SS	Samsung	K4A4G085WD	15-15-15-35	1.35V	•	•
<b>GelL</b>	GWW416GB3000C15DC	16GB ( 2x 8GB )	DS	-	-	15-17-17-35	1.35V	•	
<b>GelL</b>	GLR416GB3000C16QC(XMP)	16GB ( 4x 4GB )	SS	-	-	16-16-16-36	1.35	•	•
<b>Kingston</b>	HX430C15PB2K4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	15-16-16-39	1.35	•	•
<b>Kingston</b>	HX430C15PBK4/32(XMP)	32GB ( 4x 8GB )	DS	-	-	15-16-16-39	1.35	•	•
<b>Kingston</b>	HX430C15SB2/4(XMP)	4GB	SS	-	-	15-17-17-39	1.35	•	
<b>Kingston</b>	HX430C15SB2/8(XMP)	8GB	DS	-	-	15-17-17-39	1.35	•	
<b>Kingston</b>	HX430C15SB2K2/16(XMP)	16GB ( 2x 8GB )	DS	-	-	15-17-17-39	1.35	•	
<b>Kingston</b>	HX430C15SB2K2/8(XMP)	8GB ( 2x 4GB )	SS	-	-	15-17-17-39	1.35	•	
<b>Kingston</b>	HX430C15SB2K4/16(XMP)	16GB ( 4x 4GB )	SS	-	-	15-17-17-39	1.35	•	•
<b>Kingston</b>	HX430C15SB2K4/32(XMP)	32GB ( 4x 8GB )	DS	-	-	15-17-17-39	1.35	•	•
<b>Kingston</b>	HX430C15SBK2/16(XMP)	16GB ( 2x 8GB )	DS	-	-	15-16-16-39	1.35	•	
<b>Kingston</b>	HX430C16PBK4/64(XMP)	64GB ( 4x 16GB )	DS	-	-	16-16-16-39	1.35	•	•
<b>KLEVV</b>	IM44GU48A30-GIIHMC	4GB	SS	-	-	16-18-18-36	1.35v	•	•
<b>Klevv</b>	IM48GU48A30-GIIHMC(XMP)	8GB	DS	-	-	16-18-18-36	1.35	•	
<b>CORSAIR</b>	CMD16GX4M4B3000C15(Ver5.29)(XMP)	16GB ( 4x 4GB )	DS	-	-	15-17-17-35	1.35	•	•
<b>CORSAIR</b>	CMD32GX4M4B3000C15(Ver4.23)(XMP)	32GB ( 4x 8GB )	DS	-	-	15-17-17-35	1.35	•	•
<b>CORSAIR</b>	CMK16GX4M2B3000C15(Ver4.23)(XMP)	16GB ( 2x 8GB )	DS	-	-	15-17-17-35	1.35	•	
<b>CORSAIR</b>	CMK16GX4M4B3000C15(Ver5.29)(XMP)	16GB ( 4x 4GB )	SS	-	-	15-17-17-35	1.35	•	•
<b>CORSAIR</b>	CMK32GX4M2B3000C15(Ver4.31)(XMP)	32GB ( 2x 16GB )	DS	-	-	15-17-17-35	1.35	•	
<b>CORSAIR</b>	CMK8GX4M2B3000C15(Ver4.23)(XMP)	8GB ( 2x 4GB )	DS	-	-	15-17-17-35	1.35	•	
<b>panram</b>	PUD43000C154G4NJW	16GB(4GB*4)	SS			15-17-17-35	1.35V	•	•
<b>Team</b>	TCD48G3000C15ABK(XMP)	8GB	DS	SK hynix	H5AN4G8NMFRTFC	15-15-15-35	1.35	•	

#### 4 DIMM Slots

- 1 DIMM: Supports one module inserted in any slot as Single-channel memory configuration. **Install the module into A2 slot for better compatibility.**
- 2 DIMM: Supports one pair of modules inserted into **the same color** slots as one pair of Dual-channel memory configuration. **Install the modules into A2/B2 slots for better compatibility.**
- 4 DIMM: Supports 4 modules inserted into both A1/A2 and B1/B2 slots as two pairs of Dual-channel memory configuration

- When installing total memory of 4GB capacity or more, Windows 32-bit operation system may only recognize less than 3GB. Hence, a total installed memory of less than 3GB is recommended.

- The default DIMM frequency depends on its Serial Presence Detect (SPD), which is the standard way of accessing information from a memory module. Under the default state, some memory modules for overclocking may operate at a lower frequency than the vendor-marked value

- Always install DIMMs with the same CAS latency. For optimal compatibility, we recommend that you install memory modules of the same version or date code (D/C) from the same vendor. Check with the retailer to get the correct memory modules.

- Highly recommended to use 4-DIMM/2-DIMM kit for full DIMM configuration. Full DIMM support is subject to the physical characteristics of individual CPUs or Memory.