

**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
SAMSUNG	M378A5143DB0--CPB	4G	SS	SEC 428	K4A4G085WD	13-13-13-33	1.5V	•	•	•
SAMSUNG	M378A1G43DB0--CPB	8G	DS	SEC 428	K4A4G085WD	13-13-13-33	1.5V	•	•	•
G.SKILL	F4-2133C15Q-32GRK	8G	DS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
GLOWAY	PC4-17000	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
KINGSTON	HX421C13PBK4/16	4G	SS	N/A	Heat-Sink Package		1.2V	•	•	•
KINGSTON	HX421C14FB/8	8G	DS	N/A	Heat-Sink Package	14-14-14-35	1.2V	•	•	•
KINGSTON	HX421C14FBK4/32	8G	DS	N/A	Heat-Sink Package		1.2V	•	•	•
PANRAM	PUD42133C138G4NJW	8G	DS	N/A	Heat-Sink Package	13-13-13-35	1.2V	•	•	•
PANRAM	PUD42133C134G4NJW	4G	SS	N/A	Heat-Sink Package	13-13-13-35	1.2V	•	•	•
CORSAIR	CMK16GX4M4A2133C15	4G	SS	N/A	Heat-Sink Package	15-15-15-36	1.2V	•	•	•
CORSAIR	CMV4GX4M1A2133C15	4G	SS	N/A	4GA72Z9RGR	13-13-34-33	1.5V	•	•	•
CORSAIR	CMV8GX4M1A2133C15	8G	DS	SEC 446	K4A4G085WD	13-13-13-33	1.5V	•	•	•
CRUCIAL	MTA8ATF51264AZ-2G1A1	4G	SS	MICRON	4QA77D9RCQ	13-13-13-33	1.2V	•	•	•
TEAM	TED44GM2133C15BK	4G	DS	SEC 443	K4A4G085WD	15-15-15-36	1.2V	•	•	•
TEAM	TED48GM2133C15BK	8G	SS	SEC	K4A4G085WD	15-15-15-36	1.2V	•	•	•
APACER	78.C1GM3.AF10B	8G	DS	SK HYNIX	H5AN4G8NMFR	14-14-14-33	1.5V	•	•	•
APACER	AU04GGB13CDBGC	4G	SS	SK HYNIX	H5AN4G8NMFR	14-14-14-33	1.5V	•	•	•
TEKISM	T4U2133B8G15-SAD	8G	DS	SEC 446	K4A4G085WD			•	•	•
G.SKILL	F4-2133C15Q-16GRB	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
ADATA	AD4U2133W4G15-B	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	-	•	•	•
ADATA	AD4U2133W8G15	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
Apacer	78.B1GM3.AF00B	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
Apacer	78.C1GM3.AF10B	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
AVEXIR	AVD4U21331504G-4M	4GB	SS	AVEXIR	512X8DDR4	15-15-15-35	1.2	•	•	•
CENTURY	CD8G-D4U2133	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	-	•	•	•
CENTURY	CK8GX4-D4U2133	32GB(4x8GB)	DS	SK hynix	H5AN4G8NMFRTFC	15-15-15-35	1.2	•	•	•
CORSAIR	CMD16GX4M4B2133C10(Ver3.20)	16GB ( 4x 4GB)	SS	-	-	10-12-12-31	1.35	•	•	•
CORSAIR	CMK16GX4M4A2133C13(Ver4.23)(XM)	16GB ( 4x 4GB)	SS	-	-	13-15-15-28	1.2	•	•	•
CORSAIR	CMK32GX4M4A2133C13(Ver4.23)(XM)	32GB ( 4x 8GB)	DS	-	-	13-15-15-28	1.2	•	•	•
CORSAIR	CMK64GX4M8A2133C13(Ver4.23)(XM)	64GB ( 8x 8GB)	DS	-	-	13-15-15-28	1.2	•	•	•
CORSAIR	CMV4GX4M1A2133C15	4GB	SS	-	-	15-15-15-36	1.2	•	•	•
CORSAIR	CMV8GX4M1A2133C15	8GB	DS	-	-	15-15-15-36	1.2	•	•	•
Crucial	CT4G4DFS8213.8FA1	4GB	SS	Micron	D9RGQ	15-15-15-37	1.2	•	•	•
Crucial	CT4G4DFS8213.8FA2	4GB	SS	Micron	D9RGQ	2133-15-15-	1.2	•	•	•
Crucial	CT8G4DFD8213.16FA1	8GB	DS	Micron	D9RGQ	15-15-15-37	1.2	•	•	•
Crucial	CT8G4DFD8213.16FA2	8GB	DS	Micron	D9RGQ	2133-15-15-	1.2	•	•	•
Crucial	CT8G4DFD8213.C16FAR11	8GB	DS	Micron	C9BDH	15-15-15-36	1.2	•	•	•
G.SKILL	F4-2133C15Q-16GRR	16GB ( 4x 4GB)	SS	-	-	15-15-15-35	1.2	•	•	•
G.SKILL	F4-2133C15Q-32GRR	32GB ( 4x 8GB)	DS	-	-	15-15-15-35	-	•	•	•
Geil	GPR416GB2133C15QC	16GB ( 4x4GB)	SS	-	-	2133-15-15-	1.2	•	•	•
Kingston	KVR21N15D8/8	8GB	DS	SK hynix	H5AN4G8NMFRTFC	15-15-15-37	1.2	•	•	•
Kingston	KVR21N15S8/4	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-37	1.2	•	•	•
KLEVV	KM4C4GX4N-2133-15-15-35-0	4GB	SS	-	-	15-15-15-35	1.2	•	•	•
KLEVV	KM4C4GX4N-2133-15-15-35-1	4GB	SS	-	-	15-15-15-35	1.2	•	•	•
KLEVV	KM4C8GX4N-2133-15-15-35-0	8GB	DS	-	-	15-15-15-35	1.2	•	•	•
KLEVV	KM4C8GX4N-2133-15-15-35-1	8GB	DS	-	-	15-15-15-35	1.2	•	•	•
Micron	MTA16ATF1G64AZ-2G1A2	8GB	DS	Micron	D9RG0	2133-15-15-	-	•	•	•
Micron	MTA8ATF51264AZ-2G1A2	4GB	SS	Micron	D9RG0	2133-15-15-	-	•	•	•
Panram	PUD42133C154G2VS	8GB ( 2x 4GB )	SS	SK Hynix	H5AN4GBNMFRTFC	15-15-15-36	1.2	•	•	•
panram	PUD42133C154GNJK	4GB	SS	-	-	15-15-15-36	1.2	•	•	•
Panram	PUD42133C158G2VS	16GB ( 2x 8GB)	DS	SK Hynix	H5AN4GBNMFRTFC	15-15-15-36	1.2	•	•	•
Samsung	M378A1G43DB0-CPB	8GB	DS	Samsunq	K4A4G085WD	15-15-15-36	-	•	•	•
Samsung	M378A5143DB0-CPB	4GB	SS	Samsung	K4A4G085WD	15-15-15-36	-	•	•	•
SanMax	SMD-4G28HP-21P	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-37	-	•	•	•
SanMax	SMD-8G28HP-21P	8GB	DS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-37	-	•	•	•
Silicon Power	SP004GBLFU213N01	4GB	SS	Samsung	K4A4G085WD	15-15-15-37	-	•	•	•
Silicon Power	SP008GBLFU213N01	8GB	DS	Samsung	K4A4G085WD	15-15-15-37	-	•	•	•
SK Hynix	HMA82GU6MFR8N-TF	16GB	DS	SK Hynix	H5AN8G8NMFRTFC	15-15-15-36	-	•	•	•
SUPER	FBU2B008GM	8GB	DS	Micron	D9RGQ	15-15-15-36	1.2	•	•	•
Team	TED44GM2133C15ABK	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	15-15-15-36	1.2	•	•	•
UMAX	84G44G93MC-210MCALGF15	4GB	SS	Micron	D9RGQ	15-15-15-36	-	•	•	•
UMAX	84G48G93MC-210MCNGF15	8GB	DS	Micron	D9RGQ	15-15-15-36	-	•	•	•
KINGSTON	KVR21N15S8/4	4G	SS	SK HYNIX	H5AN4G8NMFR		1.2V	•	•	•
KINGSTON	KVR21N15D8/8	8G	DS	SK HYNIX	H5AN4G8NMFR		1.2V	•	•	•
KINGSTON	HX421C14FB/8	8G	DS	N/A	Heat-Sink Package		1.2V	•	•	•
CENTURY	PX4-17000	8G	DS	SK HYNIX	H5AN4G8NMFR			•	•	•
APACER	AHU08GGB13CGT7G	8G	DS	N/A	N/A			•	•	•

**DDR4 2400 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
ADATA	AX4U2400W8G16-DRZ	8G	DS	N/A	Heat-Sink Package	16-16-16	1.2V	•	•	•
G.SKILL	F4-2400C15Q-32GRB	8G	DS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
PATRIOT	PX416G240C5QK	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
GLOWAY	PC4-19200	4G	SS	GLOWAY	512X8DDR4	16-16-16-35	1.2V	•	•	•
TEAM	TED44GM2400C16BK	4G	SS	SEC 437	K4A4G085WD	16-16-16-39	1.2V	•	•	•
TEAM	TED48GM2400C16BK	8G	DS	SEC 443	K4A4G085WD	V	1.2V	•	•	•
PANRAM	PUD42400C154G4NJW	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
PANRAM	PUD42400C158G4NJW	8G	DS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
CORSAIR	CMK32GX4M4A2400C14	8G	DS	N/A	Heat-Sink Package	14-16-16-31	1.2V	•	•	•
CRUCIAL	BLS4K4G4D240FSA	4G	SS	N/A	Heat-Sink Package	16-16-16-39	1.2V	•	•	•
ADATA	AX4U2400W4G16-DRZ	4G	SS	N/A	Heat-Sink Package	16-16-16	1.2V	•	•	•
GEIL	GPR416GB2400C15QC	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
MUSHKIN	997199F	8G	DS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
KINGSTON	HX424C15FBK4/32	8G	DS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•
KINGSTON	HX424C15FBK4/16	4G	SS	N/A	Heat-Sink Package		1.2V	•	•	•
APACER	78.C1GMA.AF30B	8G	DS	SK HYNIX	H5AN4G8NMFR	16-16-16-36	1.2V	•	•	•
APACER	78.B1GMA.AF20B	4G	SS	SK HYNIX	H5AN4G8NMFR	16-16-16-36	1.2V	•	•	•
G.SKILL	F4-2400C14Q2-128GRK	16G	DS	N/A	Heat-Sink Package	14-14-14-34	1.2V	•	•	•
G.SKILL	F4-2400C14Q2-16GRK	4G	SS	N/A	Heat-Sink Package	14-14-14-34	1.2V	•	•	•
G.SKILL	F4-2400C15Q-16GRR	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•

ADATA	AX4U2400W4G16-QRZ(XMP)	32GB (4x 8GB)	SS	-	-	-	16-16-16-39	1.2	•	•	•
ADATA	AX4U2400W8G16-QRZ(XMP)	32GB (4x 8GB)	DS	-	-	-	16-16-16-39	1.2	•	•	•
Apacer	78.B1GMS.4050B	4GB	SS	Samsung	K4A4G085WD	-	17-17-17-39	-	•	•	•
Apacer	78.C1GMS.4010B	8GB	DS	Samsung	K4A4G085WD	-	17-17-17-39	-	•	•	•
CORSAIR	CMD16GX4M4A2400C14(Ver4.23)(XM	16GB (4x 4GB)	SS	-	-	-	14-16-16-31	1.2	•	•	•
CORSAIR	CMD32GX4M4A2400C14(Ver4.23)(XM	32GB (4x 8GB)	DS	-	-	-	14-16-16-31	1.2	•	•	•
CORSAIR	CMK16GX4M4A2400C14(Ver4.23)(XM	16GB (4x 4GB)	SS	-	-	-	14-16-16-31	1.2	•	•	•
CORSAIR	CMK32GX4M4A2400C14(Ver4.23)(XM	32GB (4x 8GB)	DS	-	-	-	14-16-16-31	1.2	•	•	•
Crucial	BLS4G4D240FSA.8FAD	4GB	SS	-	-	-	16-16-16-40	1.2	•	•	•
crucial	BLS4G4D240FSA.8FAR(XMP)	4GB	SS	-	-	-	16-16-16-40	1.2	•	•	•
Crucial	BLS8G4D240FSA.16FAD	8GB	DS	-	-	-	16-16-16-40	1.2	•	•	•
crucial	BLS8G4D240FSA.16FAR(XMP)	8GB	DS	-	-	-	16-16-16-40	1.2	•	•	•
G.SKILL	F4-2400C15Q-16GRR	16GB (4x 4GB)	SS	-	-	-	15-15-15-35	1.2	•	•	•
G.SKILL	F4-2400C15Q2-128GRK(XMP)	128GB (8x	DS	-	-	-	15-15-15-35	1.2	•	•	•
G.SKILL	F4-2400C15Q-32GRR	32GB (4x 8GB)	DS	-	-	-	15-15-15-35	1.2	•	•	•
Gell	GLR464GB2400C14QC(XMP)	16GB (4x 4GB)	DS	-	-	-	14-14-14-35	1.2	•	•	•
Gell	GPR416GB2400C15QC(XMP)	16GB (4x 4GB)	SS	-	-	-	15-15-15-35	1.2	•	•	•
Gell	GPR432GB2400C15QC(XMP)	32GB (4x 8GB)	DS	-	-	-	15-15-15-35	1.2	•	•	•
Kingston	HX424C12PB2K4/16	16GB (4x 4GB)	SS	-	-	-	12-13-13-35	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	•	•	•
V-color	TD4G8C17-UH	4GB	SS	V-color	DW3J0460HM	-	15-15-15-36	1.2	•	•	•
V-color	TD8G16C17-UH	8GB	DS	V-color	A4G8H-24CS	-	17-17-17-39	1.2	•	•	•
AVEXIR	AVD4UZ124001608G-4COR	8G	DS	N/A	Heat-Sink Package	-	-	1.2V	•	•	•
AVEXIR	AVD4UZ124001604G-4COB	4G	SS	N/A	Heat-Sink Package	-	-	1.2V	•	•	•

#### 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	
CORSAIR	CMK16GX4M4A2666C16	4G	SS	N/A	Heat-Sink Package	16-16-18-35	1.2V	•	•	•	
CORSAIR	CMD32GX4M4A2666C15(Ver5.29)	8G	DS	N/A	Heat-Sink Package	15-17-17-35	1.2V	•	•	•	
CORSAIR	CMD128GX4M8A2666C15	16G	DS	N/A	Heat-Sink Package	15-18-18-35	1.2V	•	•	•	
G.SKILL	F4-2666C15Q-16GRR	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•	
PATRIOT	PX416G2666C5QK	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•	
G.SKILL	F4-2666C16Q2-64GRB	8G	DS	N/A	Heat-Sink Package	16-16-16-36	1.2V	•	•	•	
TEAM	TCD48G2666C15ABK	8G	DS	SK HYNIX	H5AN4G8NMFR	15-15-15-35	1.2V	•	•	•	
TEAM	TCD44G2666C15ABK	4G	SS	SEC 443	K4A4G085WD	15-15-15-35	1.2V	•	•	•	
MUSHKIN	997192F	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•	•	
KINGSTON	HX426C13PBK4/32	8G	DS	N/A	Heat-Sink Package	13-14-14-39	1.35V	•	•	•	
KINGSTON	HX426C15FBK4/32	8G	DS	N/A	Heat-Sink Package	-	-	1.2V	•	•	•
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)(X	128GB (8x	DS	-	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD16GX4M2A2666C15(Ver4.23)(XM	16GB (2x 8GB)	DS	-	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD16GX4M4A2666C15(Ver4.23)(XM	16GB (4x 4GB)	SS	-	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMD16GX4M4A2666C16(Ver4.23)(XM	16GB (4x 4GB)	SS	-	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMD16GX4M4A2666C16(Ver5.29)(XM	16GB (4x 4GB)	SS	-	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMD32GX4M4A2666C15(Ver4.23)(XM	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)(XM	32GB (4x 8GB)	DS	-	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMD64GX4M8A2666C15(Ver4.23)(XM	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	CMD16GX4M2A2666C16(Ver5.29)(XM	16GB (2x 8GB)	DS	-	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMK16GX4M4A2666C15(Ver4.23)(XM	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)(XM	16GB (4x 4GB)	SS	-	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMK16GX4M4A2666C16(Ver5.29)(XM	16GB (4x 4GB)	SS	-	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMK32GX4M2A2666C16(Ver4.31)(XM	32GB (2x	DS	-	-	-	16-18-18-35	1.2	•	•	•
CORSAIR	CMK32GX4M4A2666C15(Ver4.23)(XM	32GB (4x 8GB)	DS	-	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMK32GX4M4A2666C15(Ver5.29)(XM	32GB (4x 8GB)	DS	-	-	-	15-17-17-35	1.2	•	•	•
CORSAIR	CMK32GX4M4A2666C16(Ver5.29)(XM	32GB (4x 8GB)	DS	-	-	-	16-16-18-35	1.2	•	•	•
CORSAIR	CMK32GX4M4A2666C16R(Ver4.23)(X	32GB (4x 8GB)	DS	-	-	-	16-18-18-35	1.2	•	•	•
Crucial	BLE4G4D26AFE.A.8FAD (XMP)	8GB	SS	-	-	-	16-17-17-36	1.2	•	•	•
Crucial	BLE8G4D26AFE.A.16FAD(XMP)	16GB	DS	-	-	-	16-17-17-36	1.2	•	•	•
Crucial	BLT4G4D26AFTA.8FADG(XMP)	4GB	SS	-	-	-	16-17-17-36	1.2	•	•	•
Crucial	BLT8G4D26AFTA.16FAD(XMP)	8GB	DS	-	-	-	16-17-17-36	1.2	•	•	•
G.SKILL	F4-2666C15Q-16GRR(XMP)	16GB (4x 4GB)	SS	-	-	-	15-15-15-35	1.2	•	•	•
G.SKILL	F4-2666C15Q-32GRR(XMP)	32GB (4x 8GB)	DS	-	-	-	15-15-15-35	1.2	•	•	•
G.SKILL	F4-2666C16Q2-64GRB(XMP)	64GB (8x 8GB)	DS	-	-	-	16-16-16-36	1.2	•	•	•
Kingston	HX426C15FBK2/16(XMP)	16GB (2x 8GB)	DS	-	-	-	15-15-17-35	1.2	•	•	•
Kingston	HX426C15FBK4/16(XMP)	16GB (4x 4GB)	SS	-	-	-	15-17-17-35	1.2	•	•	•
Kingston	HX426C15FBK4/32(XMP)	32GB (4x 8GB)	DS	-	-	-	2666-15-15-	1.2	•	•	•
KLEVV	KM4C4GX4N-2666-15-15-15-35-0	4GB	SS	-	-	-	15-15-15-35	1.2	•	•	•
KLEVV	KM4C4GX4N-2666-15-15-15-35-1	4GB	SS	-	-	-	15-15-15-35	1.2	•	•	•
KLEVV	KM4C8GX4N-2666-15-15-15-35-0	8GB	DS	-	-	-	15-15-15-35	1.2	•	•	•
KLEVV	KM4C8GX4N-2666-15-15-15-35-	8GB	DS	-	-	-	15-15-15-35	1.2	•	•	•
Team	TCD44G2666C15ABK(XMP)	4GB	SS	Samsung	K4A4G085WD	-	15-15-15-35	1.2	•	•	•
Team	TCD48G2666C15ABK(XMP)	32GB(4x 8GB)	DS	Team	TCD48G2666C15ABK	-	15-15-15-35	1.2	•	•	•
CRUCIAL	BLE4G4D26AFE.A.8FAD	8G	SS	N/A	Heat-Sink Package	16-16-17-36	1.2V	•	•	•	
CRUCIAL	BLE8G4D26AFE.A.16FAD	8G	DS	N/A	Heat-Sink Package	16-16-17-36	1.2V	•	•	•	
CRUCIAL	BLT4G4D26AFTA.8FADG	4G	SS	N/A	Heat-Sink Package	16-17-17-36	1.2V	•	•	•	
CRUCIAL	BLT8G4D26AFTA.16FAD	8G	DS	N/A	Heat-Sink Package	16-17-17-36	1.2V	•	•	•	
AVEXIR	AVD4UZ126661504G-4COB	4G	SS	N/A	Heat-Sink Package	-	-	1.2V	•	•	•
AVEXIR	AVD4UZ126661508G-4COB	8G	DS	N/A	Heat-Sink Package	-	-	1.2V	•	•	•

#### 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	
CORSAIR	CMK16GX4M4A2800C16	4G	SS	N/A	Heat-Sink Package	16-18-18-36	1.2V	•	•	•	
G.SKILL	HX428C14PB2K4/16	4G	SS	N/A	Heat-Sink Package	-	-	1.35V	•	•	•
G.SKILL	F4-2800C6Q-16GRK	4G	SS	N/A	Heat-Sink Package	16-16-16-36	1.2V	•	•	•	
PATRIOT	PX416G2800C6QK	4G	SS	N/A	Heat-Sink Package	16-18-18-36	1.2V	•	•	•	
GLOWAY	PC4-22400	4G	SS	SK HYNIX	H5AN4G8NMFR	16-16-16-36	1.2V	•	•	•	

PANRAM	PUD42800C164G4NJW	4G	SS	N/A	Heat-Sink Package	16-18-18-36	1.25V	•	•	•
MUSHKIN	994207F	4G	SS	N/A	Heat-Sink Package	16-16-16-36-	1.2V	•	•	•
KINGSTON	HX428C14PBK/32	8G	DS	N/A	Heat-Sink Package	14-15-15-39-	1.35V	•	•	•
ADATA	AX4U2800316G16(XMP)	16GB	DS	-	-	16-16-16-36	1.2	•	•	•
ADATA	AX4U2800W4G17(XMP)	32GB ( 8x 4GB	DS	-	-	17-17-17-36	1.2	•	•	•
ADATA	AX4U2800W8G17(XMP)	8GB	DS	-	-	15-15-15-36	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 (4x 8GB	DS	-	-	16-16-16-36	1.2	•	•	•
CORSAIR	CMD16GX4M4A2800C16(Ver4.23)(XM	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	CMD32GX4M4A2800C16(Ver5.29)(XM	32GB ( 4x 8GB	DS	-	-	18-18-18-36	1.2	•	•	•
CORSAIR	CMK16GX4M4A2800C16(Ver4.23)(XM	16GB ( 4x 4GB	SS	-	-	16-16-18-36	1.2	•	•	•
CORSAIR	CMK16GX4M4A2800C16(Ver5.29)	16GB ( 4x 4GB	SS	-	-	16-18-18-36	1.2	•	•	•
G.SKILL	F4-2800C15Q2-64GRK(XMP)	64GB ( 8x 8GB	DS	-	-	15-16-16-35	1.25	•	•	•
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	•	•	•
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	•	•	•
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	•	•	•
AVEXIR	AVD4UZ128001604G-4COB	4G	SS	N/A	Heat-Sink Package		1.2V	•	•	•
AVEXIR	AVD4UZ128001608G-4COB	8G	DS	N/A	Heat-Sink Package		1.2V	•	•	•

### DDR4 3000 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
KINGSTON	HX430C15PB2K4/16	4G	SS	N/A	Heat-Sink Package		1.35V	•	•	•
G.SKILL	F4-3000C15Q-16GRR	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.35V	•	•	•
TEAM	TCD48G3000C16ABK	8G	DS	TEAM	T4D5128HT-30	16-16-16-36	1.35V	•	•	•
TEAM	TCD44G3000C16ABK	4G	SS	TEAM	T4D5128HT-30	16-16-16-36	1.35V	•	•	•
PANRAM	PUD43000C154G4NJW	4G	SS	N/A	Heat-Sink Package	15-17-17-35	1.35V	•	•	•
KINGSTON	HX430C15PBK4/32	8G	DS	N/A	Heat-Sink Package	15-16-16-39-	1.35V	•	•	•
Asint	SLA404G08-EWWHM(XMP)	4GB	SS	SK Hynix	H5AN4G8NMFRTFC	3000-15-15-	1.35	•	•	•
Asint	SLB404G08-EW1HM(XMP)	8GB	DS	-	-	16-18-18-44	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	•	•	•
CORSAIR	CMD16GX4M4B3000C15(Ver5.29)(XM	16GB ( 4x 4GB	DS	-	-	15-17-17-35	1.35	•	•	•
CORSAIR	CMD32GX4M4B3000C15(Ver4.23)(XM	32GB ( 4x 8GB	DS	-	-	3000-15-17-	1.35	•	•	•
CORSAIR	CMK16GX4M2B3000C15(Ver4.23)(XM	16GB ( 2x 8GB	DS	-	-	15-17-17-35	1.35	•	•	•
CORSAIR	CMK16GX4M4B3000C15(Ver5.29)(XM	16GB ( 4x 4GB	SS	-	-	15-17-17-35	1.35	•	•	•
G.SKILL	F4-3000C15Q-16GRK(XMP)	16GB ( 4x 4GB	SS	-	-	15-15-15-35	1.35	•	•	•
G.SKILL	F4-3000C15Q-16GRR(XMP)	16GB ( 4x 4GB	SS	-	-	15-15-15-35	1.35	•	•	•
G.SKILL	F4-3000C15Q-16GRR(XMP)	16GB ( 4x 4GB	SS	-	-	15-15-15-31	1.35	•	•	•
Gell	GLR416GB3000C16QC(XMP)	16GB ( 4x 4GB	SS	-	-	16-16-16-36	1.35	•	•	•
Gell	GWV416GB3000C15DC(XMP)	16GB ( 2x 8GB	DS	Gell	CG4L512G88BA093L	3000-15-17-	1.35	•	•	•
Kingston	HX430C15PB2K4/16(XMP)	16GB ( 4x 4GB	SS	-	-	15-16-16-39	1.35	•	•	•
KLEVV	IM44GU48A30-GIHM(XMP)	4GB	SS	-	-	16-18-18-36	1.35	•	•	•
panram	PUD43000C154G4NJW(XMP)	16GB ( 4x 4GB	SS	-	-	15-17-17-35	1.35	•	•	•
PATRIOT	PV432G300C6QK-PE000378(XMP)	32GB ( 8x 4GB	DS	-	-	16-16-16-36	1.35	•	•	•
Team	TCD44G3000C16ABK(XMP)	4GB	SS	Samsung	K4A4G085WD	16-16-16-36	1.35	•	•	•
Team	TCD48G3000C16ABK(XMP)	8GB(4x 8GB)	DS	Team	T4D5128HT-30	16-16-16-36	1.35	•	•	•
AVEXIR	AVD4UZ130001604G-4COB	4G	SS	N/A	Heat-Sink Package		1.35V	•	•	•
AVEXIR	AVD4UZ130001608G-4COB	8G	DS	N/A	Heat-Sink Package		1.35V	•	•	•
TEAM	TFWD416G3000C16CBK	16G	DS	TEAM	T4D10248HT-30	16-18-18-38	1.35V	•	•	•
Klevv	IM4AGU88A30-FGGHMZ	16GB	DS	N/A	Heat-Sink Package	15-16-16	1.35V	•	•	•
Klevv	IM48GU88A30-FGGHMZ	8GB	SS	N/A	Heat-Sink Package	15-16-16	1.35V	•	•	•
Klevv	IM44GU48A30-FGGHMA	4GB	SS	N/A	Heat-Sink Package	15-16-16	1.35V	•	•	•
Klevv	IM48GU88A30-FGGHMB	8GB	SS	N/A	Heat-Sink Package	15-16-16	1.35V	•	•	•
Klevv	IM44GU48A30-FGGHAB	4GB	SS	N/A	Heat-Sink Package	15-16-16	1.35V	•	•	•
Klevv	IM4AGU88A30-FGGHMB	16GB	DS	N/A	Heat-Sink Package	15-16-16	1.35V	•	•	•
CORSAIR	CMD16GX4M2B3000C15(Ver5.30)	16GB ( 2x 8GB	SS	N/A	Heat-Sink Package	15-17-17-35	1.35V	•	•	•
CORSAIR	CMD32GX4M4C3000C15(Ver5.30)	32GB ( 4x 8GB	SS	N/A	Heat-Sink Package	15-17-17-35	1.35V	•	•	•
CORSAIR	CMR16GX4M2C3000C15(Ver4.31)	16GB ( 2x 8GB	SS	N/A	Heat-Sink Package	15-17-17-35	1.35V	•	•	•
CORSAIR	CMR32GX4M4C3000C15	32GB ( 4x 8GB	DS	N/A	Heat-Sink Package	15-17-17-35	1.35V	•	•	•
Team	TDRGD48G3000HC16CBK	8GB	DS	N/A	Heat-Sink Package	16-18-18-38	1.35V	•	•	•
G.SKILL	F4-3000C15S-16GVR	16GB	DS	N/A	Heat-Sink Package	15-15-15-35	1.35V	•	•	•
FORZA	NMUD480E82-3000DB30	8GB	SS	N/A	Heat-Sink Package	15-17-17-35	1.35V	•	•	•
PATRIOT	PV432G300C6QK	32GB ( 4x 8GB	SS	N/A	Heat-Sink Package	16-16-16-36	1.35V	•	•	•
HyperX	HX430C15PB3K4/32	32GB ( 4x 8GB	SS	N/A	Heat-Sink Package	15-17-17-36	1.35V	•	•	•
PATRIOT	PVE416G300C6KBL	16GB ( 2x 8GB	SS	N/A	Heat-Sink Package	16-16-16-36	1.35V	•	•	•
PATRIOT	PVE48G300C6KRD	8GB ( 2x 4GB )	SS	N/A	Heat-Sink Package	16-16-16-36	1.35V	•	•	•
G.SKILL	F4-3000C14Q2-128GVKD	128GB ( 16GBx8)	DS	N/A	Heat-Sink Package	14-14-14-34	1.35V	•	•	•
Team	TF3D48G3000HC16CBK	8GB	SS	N/A	Heat-Sink Package	16-18-18-38	1.35V	•	•	•
Team	TF4D48G3000HC16CBK	8GB	SS	N/A	Heat-Sink Package	16-18-18-38	1.35V	•	•	•
TIGO	TMKU8GF58-3000X	8GB	DS	N/A	Heat-Sink Package	16-18-18-36	1.35V	•	•	•
CORSAIR	CMK16GX4M2B3000C15R (	8GB*2	SS	N/A	Heat-Sink Package	15-17-17-35	1.35V	•	•	•
CORSAIR	CMK16GX4M2B3000C15R (	8GB*2	SS	N/A	Heat-Sink Package	15-17-17-35	1.35V	•	•	•

### DDR4 3200+ 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
PANRAM	PUD43200C164G4NJW	4G	SS	N/A	Heat-Sink Package	16-18-18-39	1.35V	•	•	•
MUSHKIN	997202F	4G	SS	N/A	Heat-Sink Package	16-16-16-36-	1.35V	•	•	•
G.SKILL	F4-3300C16Q-16GRKD	4G	SS	N/A	Heat-Sink Package	16-16-16-36	1.35V	•	•	•
G.SKILL	F4-3333C16Q-16GRKD	4G	SS	N/A	Heat-Sink Package	16-16-16-36	1.35V	•	•	•
GEIL	GLWR416GB3400C16AC	4GB	SS	N/A	Heat-Sink Package	16-18-18-36	1.35V	•	•	•
G.SKILL	F4-3400C16Q-16GRBD	4G	SS	N/A	Heat-Sink Package	16-18-18-38	1.35V	•	•	•

G.SKILL	F4-3466C16Q-16GVK	4G	SS	N/A	Heat-Sink Package	16-18-18-38	1.35V	•		
G.SKILL	F4-3200C16Q-16GRR	16GB(4GB*4)	SS	Samsung	K4A4G085WD	16-16-16-36	1.35V	•	•	•
G.SKILL	F4-3200C16Q-16GRB	16GB(4GB*4)	SS	Samsung	K4A4G085WD	16-16-16-36	1.35V	•	•	•
G.SKILL	F4-3200C16Q-16GRK	16GB(4GB*4)	SS	Samsung	K4A4G085WD	16-16-16-36	1.35V	•	•	•
AVEXIR	AVD4U32001604G-4BZ1	16GB(4GB*4)	SS	SK hynix	H5AN4G8NMFR	16-18-18-36	1.35V	•	•	
AVEXIR	AVD4U32001604G-4CIR	16GB(4GB*4)	SS			16-18-18-36	1.35V	•	•	
CORSAIR	CMD16GX4M4A3200C16	16GB(4GB*4)	SS			16-18-18-36	1.35V	•	•	
GEIL	GPR416GB3200C15QC	16GB(4GB*4)	SS			15-15-15-35	1.35V	•	•	
Kingston	HX432C16PB2K4/16	16GB(4GB*4)	SS			16-16-16-39	1.35V	•	•	
Panram	PUD43200C164G4NJW	16GB(4GB*4)	SS			16-18-18-39	1.35V	•	•	
G.SKILL	F4-3300C16Q-16GRK	16GB(4GB*4)	SS	Samsung	K4A4G085WD	16-16-16-36	1.35V	•	•	•
G.SKILL	F4-3300C16Q-8GTZ	8GB(4GB*2)	SS	Samsung	K4A4G085WD	16-18-18-38	1.35V	•	•	
CORSAIR	CMD16GX4M4B3300C16	16GB(4GB*4)	SS	Samsung	K4A4G085WD	16-18-18-36	1.35V	•	•	
G.SKILL	F4-3333C16D-8GTZ	8GB(4GB*2)	SS	Samsung	K4A4G085WD	16-18-18-38	1.35V	•	•	
G.SKILL	F4-3333C16Q-16GRKD	16GB(4GB*4)	SS	Samsung	K4A4G085WD	16-16-16-36	1.35V	•	•	
CORSAIR	CMD16GX4M4B3333C16 ver.4.23	16GB(4GB*4)	SS	Samsung	K4A4G085WD	16-18-18-36	1.35V	•	•	
A-DATA	AX4U3333W4G16	16GB(4GB*4)	SS	SK hynix	H5AN4G8NMFR	16-16-16-36	1.35V	•	•	
CORSAIR	CMD16GX4M4B3400C16 ver. 4.23	16GB(4GB*4)	SS	Samsung	K4A4G085WD	16-18-18-38	1.35V	•	•	
G.SKILL	F4-3466C16D-8GRK	8GB(4GB*2)	SS	Samsung	K4A4G085WD	16-18-18-38	1.35V	•	•	
G.SKILL	F4-3466C16D-8GTZ	8GB(4GB*2)	SS	Samsung	K4A4G085WD	16-18-18-38	1.35V	•	•	
G.SKILL	F4-3466C16D-8GVK	8GB(4GB*2)	SS	Samsung	K4A4G085WD	16-18-18-38	1.35V	•	•	
G.SKILL	F4-3200C16D-16GTZR	8GB*2	SS	N/A	Heat-Sink Package	18-18-18-38	1.35V			•
CORSAIR	CMD16GX4M2B3200C16(Ver3.21)	16G	DS	N/A	Heat-Sink Package	16-18-18-36	1.35V			•
TIGO	CMK32GX4M2B3200C16(Ver5.39)	8GB*2	DS	N/A	Heat-Sink Package	16-18-18-38	1.35V			•
G.SKILL	CMD32GX4M2C3200C16(Ver5.39)	32GB ( 4x 8GB	SS	N/A	Heat-Sink Package	14-14-14-34	1.35V			•
CORSAIR	CMU16GX4M2C3200C16(Ver5.39)	64GB (8 x	SS	N/A	Heat-Sink Package	16-18-18-36	1.35V			•
Team	CMD16GX4M2B3200C16(Ver3.21)	8GB	SS	N/A	Heat-Sink Package	16-18-18-38	1.35V			•
Team	CMK32GX4M2B3200C16(Ver5.39)	8GB	SS	N/A	Heat-Sink Package	16-18-18-38	1.35V			•
CORSAIR	CMK64GX4M8B3200C16(Ver4.31)	16GB ( 2x 8GB	DS	N/A	Heat-Sink Package	16-18-18-36	1.35V			•
G.SKILL	CMK16GX4M2B3200C16(Ver4.24)	16GB ( 2x 8GB	DS	N/A	Heat-Sink Package	16-16-16-36	1.35V			•

#### DDR4 3466 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
CORSAIR	CMR16GX4M2C3466C16(Ver4.31)	16GB ( 2x 8GB	SS	N/A	Heat-Sink Package	16-18-18-36	1.35V			•

4 DIMM Slots

- **1 DIMM:** Supports one module inserted in any slot as Single-channel memory configuration
- **2 DIMM:** Supports one pair of modules inserted into either the blue slots or the black slots as one pair of Dual-channel memory configuration
- **4 DIMM:** Supports 4 modules inserted into both the blue and black 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.

-It is recommended to install the memory modules from the slots for better overclocking capability.

-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.