

DDR4 2133 Qualified Vendors List (QVL)									
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage (V)	DIMM socket support (Optional)		
							1 DIMM	2 DIMM	
SAMSUNG	M378A5143DB0-CPB	4GB	SS	Samsung	15-15-15-36	1.2	●	●	
SAMSUNG	M378A1G43DB0-CPB	8GB	DS	SEC 428 BCPB	15-15-15-36	1.2	●	●	
GLLOWAY	PCA-17000	4GB	SS	N/A	15-15-15-35	1.2	●	●	
KINGSTON	HX421C13PBK4/16	4*4GB	SS	Hynix	15-15-15-36	1.2	●	●	
PANRAM	PUD42133C138G4NJW	4*8GB	DS	N/A	13-13-13-35	1.2	●	●	
PANRAM	PUD42133C134G4NJW	4*4GB	SS	N/A	13-13-13-35	1.2	●	●	
CORSAIR	CMK16GX4M4A2133C15(Ver4.23)	4*4GB	SS	N/A	15-15-15-36	1.2	●	●	
CRUCIAL	MTA8ATF5L29AA2-2G1A1	4GB	SS	Micron	15-15-15-36	1.2	●	●	
CORSAIR	CMV4GX4M1A2133C15	4GB	SS	N/A	15-15-15-36	1.2	●	●	
KINGSTON	HX421C14FB/8	8GB	DS	Hynix	14-14-14-35	1.2	●	●	
APACER	78.C1GM3.AF10B	8GB	DS	Hynix	16-16-16-36	1.2	●	●	
KINGSTON	HX421C13S8K4/16	4*4GB	SS	Hynix	15-15-15-36	1.2	●	●	
KINGSTON	KVR21N15D8/8	8GB	DS	Hynix	15-15-15-36	1.2	●	●	
GALAXY	GAM4DBLBM21331SIE061C	8GB	DS	N/A	15-15-15-35	1.2	●	●	
AVEXIR	AVD4U21331508G-1C0B	8GB	DS	N/A	15-15-15-35	1.2	●	●	
CORSAIR	CMK16GX4M4A2133C13 (Ver5.29)	4*4GB	SS	N/A	13-15-15-28	1.2	●	●	
GEL	GPR48GB2133C15DC	2*4GB	SS	Micron	15-15-15-36	1.2	●	●	
KINGSTON	HX421C14FBK432	4*8GB	DS	Hynix	14-14-14-35	1.2	●	●	
TEKISM	T4U2133B8G15-SAD	8GB	DS	SEC 446 BCPB	15-15-15-36	1.2	●	●	
G.SKILL	F4-2133C150-16GRB	4*4GB	SS	Samsung	15-15-15-35	1.2	●	●	
CENTURY	PCA-17000	8GB	DS	Hynix	15-15-15-36	1.2	●	●	
ADATA	AX4U2133W4G15-QRZ	4*4GB	SS	N/A	15-15-15-36	1.2	●	●	
TEAM	TED48GM2133C15BK	8GB	DS	Hynix	15-15-15-36	1.2	●	●	
ADATA	AD4U2133W8G15-B	16*8GB	DS	Hynix	15-15-15-36	1.2	●	●	
CRUCIAL	CT8040DFD8213.16FA11	4*8GB	DS	Micron	15-15-15-36	1.2	●	●	
KINGSTON	KVR21E18S8/4	4GB	SS	Hynix	15-15-15-36	1.2	●	●	
G.SKILL	F4-2133C155-40NT	4GB	SS	Hynix	15-15-15-35	1.2	●	●	
G.SKILL	F4-2133C155-80NT	8GB	DS	Hynix	15-15-15-35	1.2	●	●	
TEAM	TPAD44G2133HC15BK	4GB	SS	Samsung	15-15-15-36	1.2	●	●	
APACER	AHJ08G0813C0T7G	8GB	DS	Hynix	16-16-16-36	1.2	●	●	
ASMT	SLB404G08-CON2B 1615	8GB	DS	Hynix	15-15-15-36	1.2	●	●	
PATRIOT	P5D48G21332	8GB	DS	PATRIOT	15-15-15-36	1.2	●	●	
SAMSUNG	M378A1K43BB1-CPB	8GB	SS	Samsung	15-15-15-36	1.2	●	●	
KINGSTON	HX421C14FB2/8	8GB	SS	Micron	14-14-14-35	1.2	●	●	
KINGSTON	HX421C14FBK2/8	2*4GB	SS	Micron	14-14-14-35	1.2	●	●	
KINGSTON	HX421C14FB/4	4GB	SS	Hynix	14-14-14-35	1.2	●	●	
V-COLOR	TC48G21S818-IMS	4*8GB	SS	Micron	15-15-15-36	1.2	●	●	
TEAM	TED416G2133C15BK	16GB	DS	Micron	15-15-15-36	1.2	●	●	
SAMSUNG	M378A5143EB1-CPB	4GB	SS	Samsung	15-15-15-36	1.2	●	●	
SAMSUNG	M378A5143EB1-CPB	4GB	SS	Samsung	15-15-15-36	1.2	●	●	
TEAM	TED48G2133C15BK	8GB	SS	Spectek	15-15-15-36	1.2	●	●	
ANUECELL	GRPIF62103818594	8GB	DS	ANUECELL	16-16-16-35	1.2	●	●	
TIGO	MIKU8G868-2133P	8GB	SS	Micron	15-15-15-36	1.2	●	●	
Xiebe	L2V-PCA-17000-1620	4GB	SS	Micron	15-15-15-36	1.2	●	●	
Xiede	L2V-PCA-17000-1620	8GB	DS	Hynix	15-15-15-36	1.2	●	●	
V-COLOR	TC48G21S815	8GB	SS	Hynix	15-15-15-36	1.2	●	●	
V-COLOR	TC48G21S15-IMS	8GB	SS	Micron	15-15-15-36	1.2	●	●	
SAMSUNG	M378A2K43BB1CPB	16GB	DS	SEC510	15-15-15-36	1.2	●	●	
G.SKILL	F4-2133C150-32GRR	4*8GB	SS	N/A	15-15-15-35	1.2	●	●	
G.SKILL	F4-2133C15Q2-64GRR	8*8GB	SS	Hynix	15-15-15-35	1.2	●	●	
CRUCIAL	CT16G40DFD8213.C16FAD1	16GB	DS	Micron	15-15-15-36	1.2	●	●	
CRUCIAL	CT8040DFD8213.C16FDR2	8GB	DS	Micron	15-15-15-36	1.2	●	●	
CRUCIAL	CT4G40DFSR213.C8FBD2	4GB	SS	Micron	15-15-15-36	1.2	●	●	
GEL	GPR48GB2133C15DC	4GB	SS	N/A	15-15-15-36	1.2	●	●	
Klevv	IM48GU88N21.FFFHMB	8GB	SS	Hynix	15-15-15-35	1.2	●	●	
Klevv	IM48GU88N21.FFFHAB	4GB	SS	Hynix	15-15-15-35	1.2	●	●	
Klevv	IM48GU88N21.FFFHMB	16GB	DS	Hynix	15-15-15-35	1.2	●	●	
GEL	GPR48GB2133C15DC	8GB	SS	Micron	15-15-15-36	1.2	●	●	
SK HYNIX	HMA451U6AFRRN-TE	4*4GB	SS	Hynix	15-15-15-36	1.2	●	●	
GLLOWAY	STK4U2133V15041C/ PCA-17000	4GB	SS	N/A	15-15-15-35	1.2	●	●	
G.SKILL	F4-2133C150-64GFX	4*16GB	DS	N/A	15-15-15-36	1.2	●	●	
G.SKILL	F4-2133C15Q2-32GFX	4*8GB	SS	N/A	15-15-15-36	1.2	●	●	
G.SKILL	F4-2133C155-80GB	8GB	SS	Hynix	15-15-15-35	1.2	●	●	
AVANT	AWW6451U67J5213N3-SAEF	4GB	SS	SEC 549	15-15-15-36	1.2	●	●	
AVANT	AWW6451U67J5213N2-SAEF	8GB	DS	SEC 549	15-15-15-36	1.2	●	●	
SanMax	SMD4-U4G28SE-21P	4GB	SS	SEC 534	15-15-15-36	1.2	●	●	
ADATA	AD4U2133W4G15-B	8*8GB	SS	Spectek	15-15-15-36	1.2	●	●	
ADATA	AD4U2133W4G15-BP	8*4GB	SS	Spectek	15-15-15-36	1.2	●	●	
Ramsta	R2D4N4M4G2133	4GB	SS	Micron	15-15-15-35	1.2	●	●	
Ramsta	R2D4N4M8G2133	8GB	SS	Micron	15-15-15-36	1.2	●	●	
APACER	AU16GBB13CDYBGC	16GB	DS	APACER	15-15-15-36	1.2	●	●	
Silicon power	SP004GB1FU133N02	4GB	SS	Hynix	15-15-15-36	1.2	●	●	
TEKISM	T4U2133B8G15-HYM	2* 8GB	DS	Hynix	15-15-15-36	1.2	●	●	
TIGO	TMKU4G456-2133P	4GB	SS	Hynix	15-15-15-36	1.2	●	●	
HYUNDAI	HYE16G21C15	16GB	SS	Hynix	15-15-15-35	1.2	●	●	

2 DIMM Slots

For each DRAM channel (A,B), make sure to install the DRAM module to gray slot first.

• 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.

• 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.

- 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.

- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.

DDR4 2400 Qualified Vendors List (QVL)									
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage(V)	DIMM socket support (Optional)		
							1 DIMM	2 DIMM	
ADATA	AX4U2400W8G16-DRZ	8GB	DS	N/A	17-16-16-39	1.2	●	●	
G.SKILL	F4-2400C15Q-32GRB	4GB	DS	N/A	15-15-15-35	1.2	●	●	
GLOWAY	PC4-19200	4GB	DS	GLOWAY	16-16-16-35	1.2	●	●	
PANRAM	PUD42400C154G4NJW	49GB	SS	N/A	15-15-15-35	1.2	●	●	
PANRAM	PUD42400C158G4NJW	49GB	DS	N/A	15-15-15-35	1.2	●	●	
CRUCIAL	BL58K4G4D240FSA	4GB	SS	Micron	16-16-16-39	1.2	●	●	
GEIL	GPRA16GB2400C15QC	4GB	SS	N/A	15-15-15-35	1.2	●	●	
MUSHKIN	997199F	29GB	DS	N/A	15-15-15-35	1.2	●	●	
KINGSTON	HX424C15FK4/32	49GB	DS	Hynix	15-15-15-35	1.2	●	●	
APACER	78.C1GMA.AF30B	8G	DS	Hynix	16-16-16-36	1.2	●	●	
PNY	MD16G2D240015AB	29GB	DS	N/A	15-15-15-35	1.2	●	●	
G.SKILL	F4-2400C15D-168GVJR	29GB	SS	N/A	15-15-15-35	1.2	●	●	
CORSAIR	CM48G2400C14K4-CN (Ver4.24)	8GB	DS	N/A	14-16-16-31	1.2	●	●	
CORSAIR	CMK8GX4M1A2400C14(Ver3.20)	8GB	DS	N/A	14-16-16-31	1.2	●	●	
PATRIOT	PV416G240C50K	49GB	SS	N/A	15-15-15-35	1.2	●	●	
KINGSTON	HX424C15FK4/16	49GB	SS	Hynix	15-15-15-35	1.2	●	●	
G.SKILL	F4-2400C14Q2-128GRK	816GB	DS	Samsung	14-14-14-34	1.2	●	●	
G.SKILL	F4-2400C14Q-16GRK	49GB	SS	Hynix	14-14-14-34	1.2	●	●	
G.SKILL	F4-2400C15Q-16GRR	49GB	SS	Samsung	15-15-15-35	1.2	●	●	
AVEXIR	AVD4U2124001688G-4COR	49GB	DS	N/A	16-16-16-36	1.2	●	●	
AVEXIR	AVD4U2124001664G-4COB	49GB	SS	N/A	16-16-16-36	1.2	●	●	
CRUCIAL	BL58G4D240FSA.16FADG	8GB	DS	Micron	16-16-16-39	1.2	●	●	
TEAM	TD48G2400C16BK	8GB	DS	Hynix	16-16-16-39	1.2	●	●	
KINGSTON	HX424C12PBK4/32	49GB	DS	Hynix	12-13-13-35	1.35	●	●	
G.SKILL	F4-2400C15Q-32GRR	49GB	DS	N/A	15-15-15-35	1.2	●	●	
GEIL	DDR48GB2400C16QC	8GB	SS	Micron	17-16-16-36	1.2	●	●	
CORSAIR	CM48G2400C16K4-CN (Ver5.20)	8GB	DS	Hynix	16-16-16-39	1.2	●	●	
CORSAIR	CM032GX4M4A2400C14 (Ver4.23)	49GB	DS	N/A	14-16-16-31	1.2	●	●	
AMD	R748G2400U2S	8GB	DS	N/A	15-15-15-36	1.2	●	●	
MICRON	MTA16AT1G64A2-2G3B1	16GB	DS	Micron	17-17-17-39	1.2	●	●	
MICRON	MTA8AT1G64A2-2G3B1	8GB	SS	Micron	17-17-17-39	1.2	●	●	
KINGSTON	HX424C12SB2K4/16	49GB	SS	Hynix	12-14-14-35	1.35	●	●	
KINGSTON	HX424C12SB2K4/32	49GB	DS	Hynix	12-14-14-35	1.35	●	●	
KINGSTON	HX424C15F8K2/16	29GB	DS	Hynix	15-15-15-35	1.2	●	●	
GALAXY	GAM48X1.BS240016.JE164C	4GB	SS	N/A	16-16-16-36	1.2	●	●	
APACER	AH080GB24C2DTS1	29GB	DS	N/A	16-16-16-36	1.2	●	●	
CORSAIR	CMK8GX4M2A2400C14(Ver3.28)	29GB	SS	N/A	14-16-16-31	1.2	●	●	
CORSAIR	CMK16GX4M2A2400C14	29GB	DS	N/A	14-16-16-31	1.2	●	●	
AVEXIR	AVD4U2124001688G-1COB	8GB	SS	N/A	16-16-16-36	1.2	●	●	
AVEXIR	AVD4U2124001688G-1BW	8GB	DS	N/A	16-16-16-36	1.2	●	●	
APACER	AL080GB24C2ETBGC	8GB	DS	APACER	17-17-17-39	1.2	●	●	
AVEXIR	AVD4U2124001688G-2COR	29GB	DS	N/A	16-16-16-36	1.2	●	●	
V-COLOR	8GTC48G24S817-IMS	49GB	SS	V-COLOR	17-17-17-39	1.2	●	●	
G.SKILL	F4-2400C15Q-64G9IS	416GB	SS	Micron	15-15-15-35	1.2	●	●	
CRUCIAL	BL58G4D240FSA.16FARG	49GB	DS	Micron	16-16-16-39	1.2	●	●	
GEIL	GLW416GB82400C15DC	8GB	SS	Hynix	15-15-15-35	1.2	●	●	
TEAM	TDTRD48G240HC15ABK	8GB	SS	N/A	15-15-15-35	1.2	●	●	
TEAM	TDRE48G240HC15ABK	8GB	DS	N/A	14-16-16-31	1.2	●	●	
ADATA	AX4U2400W8G16-BRZ	8GB	DS	N/A	17-16-16-39	1.2	●	●	
KINGSTON	HX424C15FB/16	16GB	DS	Micron	15-15-15-35	1.2	●	●	
CRUCIAL	BL58G4D240FSA.16FARG	8GB	DS	Micron	16-16-16-39	1.2	●	●	
GALAXY	GAM4HFL1BM2400015E08BC	8GB	DS	N/A	15-15-15-35	1.2	●	●	
CORSAIR	CMK32GX4M4A2400C16R1(Ver3.31)	49GB	SS	Micron	16-16-16-39	1.2	●	●	
CORSAIR	CM036GX4M4B2400C16	49GB	SS	Hynix	10-12-12-28	1.35	●	●	
MUSHKIN	997199T	29GB	SS	N/A	15-15-15-35	1.2	●	●	
GEIL	8G2139C15L1.2V	8GB	DS	Hynix	14-16-16-35	1.2	●	●	
TEAM	TD416G2400C16BK	16GB	DS	Micron	16-16-16-39	1.2	●	●	
TEAM	TCD48G2400C14BK	4GB	SS	Hynix	14-16-16-31	1.2	●	●	
TIGO	TMKURGF28-2400U	8GB	DS	N/A	17-17-17-39	1.2	●	●	
APACER	AL080GB24CEYBGC	8GB	SS	Hynix	17-17-17-39	1.2	●	●	
KINGSTON	HX424C12SB2K2/16	16G	DS	Hynix	12-14-14-35	1.35	●	●	
GLOWAY	PC4-19200	8GB	SS	N/A	15-15-15-35	1.2	●	●	
ADATA	AX4U240038G16-BWZ	89GB	SS	Hynix	17-16-16-39	1.2	●	●	
ADATA	AX4240031G16-SBF	169GB	DS	Hynix	17-16-16-39	1.2	●	●	
AVEXIR	AVD4U2124001688G-4COR	49GB	SS	Micron	16-16-16-36	1.2	●	●	
AVEXIR	AVD4U2124001684G-4COR	49GB	SS	Micron	16-16-16-36	1.2	●	●	
KINGSTON	TF24D41758MB-6	8GB	SS	Micron	17-17-17-39	1.2	●	●	
KINGSTON	TF24D41758MBD-4	4GB	SS	Micron	17-17-17-39	1.2	●	●	
RAMAXEL	RMU45120MB88H9F-2400	4GB	SS	Micron	17-17-17-39	1.2	●	●	
RAMAXEL	RMU45120MB788F-2400	2GB	SS	Micron	17-17-17-39	1.2	●	●	
V-COLOR	TC48G24S817	8GB	SS	V-COLOR	17-17-17-39	1.2	●	●	
ADATA	AX4U240038G16-SBF	89GB	SS	Hynix	17-17-17-39	1.2	●	●	
ADATA	AX4U2400W8G16-DRD	8GB	DS	Hynix	17-17-17-39	1.2	●	●	
ADATA	AX4240031G16-DRD	16GB	DS	Hynix	17-17-17-39	1.2	●	●	
G.SKILL	F4-2400C15Q2-64GRK	89GB	SS	Hynix	15-15-15-35	1.2	●	●	
TEAM	TCD48G2400C14BK	8GB	SS	Micron	14-16-16-31	1.2	●	●	
TEAM	TD44G2400C16BK	4GB	SS	Micron	16-16-16-39	1.2	●	●	
CRUCIAL	BL58G4D240FSA.16FAD	16GB	DS	Micron	16-16-16-39	1.2	●	●	
CRUCIAL	BL58G4D240FSA.8FARG	4GB	SS	Micron	16-16-16-39	1.2	●	●	
PATRIOT	PV48G240C5	8GB	SS	N/A	15-15-15-35	1.2	●	●	
TEAM	TFW0416G2400C15BK	16GB	DS	TEAM	15-17-17-35	1.2	●	●	
TEAM	TFRD44G2400C15ABK	4GB	SS	Hynix	15-15-15-35	1.2	●	●	
Klevv	IM44GU48N24-FFFAZ	4GB	SS	Hynix	15-15-15-35	1.2	●	●	
Klevv	IM44G08N24-FFFHMB	16GB	DS	Hynix	15-15-15-35	1.2	●	●	
Klevv	IM48G08N24-FFFHMB	8GB	SS	Hynix	15-15-15-35	1.2	●	●	
Klevv	IM48G08N24-FFFHMB	8GB	SS	Hynix	15-15-15-35	1.2	●	●	
Klevv	IM44GU48N24-FFFAZ	4GB	SS	Hynix	15-15-15-35	1.2	●	●	
G.SKILL	F4-2400C15Q-16G17R	8GB	SS	Hynix	15-15-15-35	1.2	●	●	
CRUCIAL	MTA16AT1G64A2-2G3A2	8GB	DS	Micron	17-17-17-39	1.2	●	●	
G.SKILL	F4-2400C15Q-64GFX	416GB	DS	Hynix	15-15-15-39	1.2	●	●	
G.SKILL	F4-2400C15Q-32GFX	49GB	SS	Hynix	15-15-15-39	1.2	●	●	
G.SKILL	F4-2400C16Q-64GFX	416GB	DS	Hynix	16-16-16-39	1.2	●	●	
G.SKILL	F4-2400C16Q-32GFX	49GB	SS	Hynix	16-16-16-39	1.2	●	●	
CORSAIR	CMK16GX4M2Z2400C16(Ver3.31)	29GB	SS	Micron	16-16-16-38	1.2	●	●	
CORSAIR	CMK128GX4M8A2400C14(Ver5.30)	816GB	DS	Hynix	14-16-16-31	1.2	●	●	
AMD	R744G2400U1S	4GB	SS	N/A	15-15-15-36	1.2	●	●	
CORSAIR	CMK128GX4M8A2400C14(Ver5.30)	816GB	DS	Hynix	14-16-16-31	1.2	●	●	
CORSAIR	CMK16GX4M2Z2400C16(Ver3.31)	29GB	SS	Micron	16-16-16-39	1.2	●	●	
Geil	GFR416GB2400C16S	16GB	SS	Micron	16-16-16-36	1.2	●	●	
Geil	GFR432GB2400C16D	16GB	SS	Micron	16-16-16-36	1.2	●	●	
HyperX	HX424C15F8K4/32	49GB	SS	Hynix	15-15-15-35	1.2	●	●	
GLOWAY	STK4U2400D1761C	8GB	DS	Micron	17-17-17-39	1.2	●	●	
GLOWAY	STK4U2400D1761C	8GB	SS	Micron	17-17-17-39	1.2	●	●	
GLOWAY	STK4U2400D1761C	16GB	SS	Micron	17-17-17-39	1.2	●	●	
PATRIOT	PSD48G240081	8GB	SS	SEC 710	17-17-17-39	1.2	●	●	
PATRIOT	PSD44G240081	4GB	SS	SEC 707	16-16-16-39	1.2	●	●	
PATRIOT	PSD41G240082	16GB	DS	SEC 707	17-17-17-39	1.2	●	●	
PATRIOT	PV432G240C50K	49GB	SS	N/A	15-15-15-35	1.2	●	●	
PATRIOT	PVE48G240C5KRD	29GB	SS	N/A	15-15-15-35	1.2	●	●	
PATRIOT	PVE416G240C5KBL	29GB	SS	N/A	15-15-15-35	1.2	●	●	
SAMSUNG	M378AK483B1-CRC	16GB	DS	Samsung	17-17-17-39	1.2	●	●	
Crucial	CT8G4DFS24A.C8FBD1	8GB	SS	Micron	17-17-17-39	1.2	●	●	
ADATA	AD4X240038G17-BP	89GB	SS	SpecTek	17-17-17-39	1.2	●	●	
APACER	AH080GB24CDU7S	8GB	SS	N/A	16-16-16-36	1.2	●	●	
Crucial	BL58G4D240FSA.16FBR2	8GB	DS	Micron	16-16-16-39	1.2	●	●	
Asard	VML41UG-MIC11222G	8GB	DS	Micron	17-17-17-39	1.2	●	●	
KINGMAX	GLLH22F-38KHA CFBU2	16GB	DS	N/A	17-17-17-39	1.2	●	●	
KINGMAX	GLL42F-38KHA CFBU2	8GB	DS	KINGMAX	17-17-17-39	1.2	●	●	
GEIL	GP44GB2400C16SC	4GB	SS	Micron	17-16-16-36	1.2	●	●	
Kingston	KVR24N17S04	4GB	SS	Micron	17-17-				

2 DIMM Slots

For each DRAM channel (A,B), make sure to install the DRAM module to gray slot first.

• 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.

• 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.

DDR4 2400 Qualified Vendors List (QVL)									
APACER	AH40G0824C4DU70	8GB	SS	Micron	16-16-16-36	1.2	●	●	
GEIL	GASB416GB2400C16QC	4GB	SS	Micron	16-16-16-36	1.2	●	●	
GEIL	GASB432GB2400C16QC	8GB	SS	N/A	16-16-16-36	1.2	●	●	
TIGO	TMKU8688-2400U	8GB	SS	Hynix	17-17-17-39	1.2	●	●	
APACER	AU16GB824CEYBGC	16GB	DS	APACER	17-17-17-39	1.2	●	●	
GEIL	GLS48GB2400C16QC	4GB	SS	N/A	17-16-16-36	1.2	●	●	
GLLOWAY	TYP8U2400E17042C	8GB	SS	Micron	17-17-17-39	1.2	●	●	
Asgard	VML41UG-MEC1U2B01	8GB	SS	N/A	17-17-17-39	1.2	●	●	
silicon power	SP008GBL FLJZ40602	8GB	SS	Hynix	17-17-17-39	1.2	●	●	
GeIL	GLS48GB2400C16QC	4GB	SS	Micron	17-16-16-36	1.2	●	●	
TIGO	TMKU4G455-2400U	4GB	SS	TIGO	17-17-17-39	1.2	●	●	
TIGO	TMKUGF68-2400U	16GB	DS	TIGO	17-17-17-39	1.2	●	●	
HYUNDAI	HYE4G24C17	4GB	SS	Hynix	17-17-17-39	1.2	●	●	
HYUNDAI	HYE8G24C17	8GB	SS	Hynix	17-17-17-39	1.2	●	●	
Apacer	AU16GB824CEYBGH	16GB	DS	Micron	17-17-17-39	1.2	●	●	
MAXSUN	MSD48G24Q3	8GB	DS	Micron	17-17-17-39	1.2	●	●	
TECLAST	TLD4G24A30	4GB	DS	Micron	17-17-17-39	1.2	●	●	
TECLAST	TLD48G24A30	8GB	SS	Micron	17-17-17-39	1.2	●	●	
Kingston	KVR24N17S8/80-SP	8GB	SS	Micron	17-17-17-39	1.2	●	●	
ADATA	AD4U2400W8G17-B	4GB	SS	SK Hynix	15-15-15-35	1.2	●	●	
ADATA	AD4U2400W8G17-B	8GB	DS	SK Hynix	15-15-15-35	1.2	●	●	
ADATA	AX4U2400316G16-DRD(XMP)	16GB	DS	SK Hynix	16-16-16-39	1.2	●	●	
ADATA	AX4U2400316G16-SBF(XMP)	16GB	DS	SK Hynix	15-15-15-36	1.2	●	●	
ADATA	AX4U240038G16-BR2(XMP)	8GB	SS	SK Hynix	16-16-16-39	1.2	●	●	
ADATA	AX4U240038G16-SBF(XMP)	8GB	SS	SK Hynix	16-16-16-39	1.2	●	●	
ADATA	AX4U2400W8G16-BR2(XMP)	8GB	DS	SK Hynix	15-15-15-36	1.2	●	●	
ADATA	AX4U2400W8G16-DRD(XMP)	8GB	DS	SK Hynix	16-16-16-39	1.2	●	●	
Apacer	78.B10MS.409B	4x 8GB	SS	Samsung	17-17-17-39	-	●	●	
Apacer	78.C1GMS.401B	4x 8GB	DS	Samsung	17-17-17-39	-	●	●	
Apacer	EK.08G2T.GEC(XMP)	8GB	SS	Micron	17-17-17-39	-	●	●	
Apacer	EL.08G2T.GFM	8GB	SS	SK Hynix	17-17-17-39	-	●	●	
Asgard	VML41UE-MIC1U2Q01	2GB	SS	Micron	17-17-17-39	1.2	●	●	
CORSAIR	CMK16GX4M4A2400C14(Ver4.23)(XMP)	4x 4GB	SS	-	14-16-16-31	1.2	●	●	
CORSAIR	CMK32GX4M4A2400C14(Ver4.23)(XMP)	4x 8GB	DS	-	14-16-16-31	1.2	●	●	
CORSAIR	CMK16GX4M2A2400C14(Ver4.23)(XMP)	2x 8GB	DS	Micron	15-15-15-36	1.2	●	●	
CORSAIR	CMK16GX4M2D2400C14(Ver4.21)(XMP)	2x 8GB	DS	Samsung	14-16-16-31	1.2	●	●	
CORSAIR	CMK16GX4M2Z2400C16(Ver3.31)	2x 8GB	SS	Micron	16-16-16-39	1.2	●	●	
CORSAIR	CMK16GX4M4A2400C14(Ver4.23)(XMP)	4x 4GB	SS	-	14-16-16-31	1.2	●	●	
CORSAIR	CMK16GX4M4A2400C14(Ver5.20)(XMP)	4x 4GB	SS	SK Hynix	14-16-16-31	1.2	●	●	
CORSAIR	CMK32GX4M4A2400C14(Ver4.23)(XMP)	4x 8GB	DS	-	14-16-16-31	1.2	●	●	
CORSAIR	CMK32GX4M4A2400C16(Ver3.31)(XMP)	4x 8GB	SS	Micron	15-15-15-36	1.2	●	●	
CORSAIR	CMK64GX4M4A2400C14(Ver3.31)(XMP)	4x 16GB	DS	Micron	15-15-15-36	1.2	●	●	
CORSAIR	CMK64GX4M4A2400C14(Ver4.31)(XMP)	4x 16GB	DS	Samsung	15-15-15-36	1.2	●	●	
CORSAIR	CMK8GX4M2D2400C14(Ver3.11)(XMP)	2x 4GB	DS	Micron	14-16-16-31	1.2	●	●	
crucial	BL51604D240F5B.16FBD(XMP)	16GB	DS	Micron	16-16-16-39	1.2	●	●	
crucial	BL56404D240F5B.8FBD(XMP)	4GB	SS	Micron	16-16-16-39	1.2	●	●	
crucial	BL56G4D240F5SK.8FBD(XMP)	8GB	SS	Micron	16-16-16-39	1.2	●	●	
crucial	CT16G4D40FDB24A.C16FDR1	16GB	DS	Micron	17-17-17-39	1.2	●	●	
G.SKILL	F4-2400C14Q2-128GRK(XMP)	8x 16GB	DS	Samsung	14-14-14-34	1.2	●	●	
G.SKILL	F4-2400C14Q2-128GRK(XMP)	8x 16GB	DS	Samsung	15-15-15-36	1.2	●	●	
G.SKILL	F4-2400C15Q-16GRK(XMP)	4x 4GB	SS	Micron	15-15-15-35	1.2	●	●	
G.SKILL	F4-2400C15Q2-128GRK(XMP)	8x 16GB	DS	Samsung	15-15-15-35	1.2	●	●	
G.SKILL	F4-2400C15Q2-128GVK(XMP)	8x 16GB	DS	SK Hynix	15-15-15-36	1.2	●	●	
G.SKILL	F4-2400C15Q2-64GRK(XMP)	8x 8GB	DS	Samsung	15-15-15-35	1.2	●	●	
G.SKILL	F4-2400C15Q-32GRK(XMP)	4x 8GB	DS	Micron	15-15-15-35	1.2	●	●	
GeIL	GASB416GB2400C16QC(XMP)	4GB	SS	Micron	16-16-16-36	1.2	●	●	
GeIL	GFR432GB2400C16D(XMP)	16GB	SS	Micron	16-16-16-36	1.2	●	●	
GeIL	GLS48GB2400C16QC(XMP)	4GB	SS	Micron	16-16-16-36	1.2	●	●	
GeIL	GPR416GB2400C15QC(XMP)	4x 4GB	SS	Samsung	15-15-15-35	1.2	●	●	

2 DIMM Slots
For each DRAM channel (A,B), make sure to install the DRAM module to gray slot first.
• 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.
• 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.
- 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.
- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.

DDR4 2666 Qualified Vendors List (QVL)								
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage(V)	DIMM socket support (Optional)	
							1 DIMM	2 DIMM
CORSAIR	CMK16GX4M4A2666C16 (Ver5.29)	4*4GB	SS	N/A	16-18-18-35	1.2	*	*
CORSAIR	CM032GX4M4A2666C15(Ver5.29)	4*8GB	DS	N/A	15-17-17-35	1.2	*	*
MUSHKIN	997132F	2*4GB	SS	N/A	15-15-15-35	1.2	*	*
KINGSTON	HX426C13PBK4/32	4*8GB	DS	Hynix	15-15-15-35	1.35	*	*
KINGSTON	HX426C15FBK4/32	4*8GB	DS	Hynix	15-17-17-35	1.2	*	*
CORSAIR	CM0128GX4M8A2666C15	4*16GB	DS	N/A	15-17-17-35	1.2	*	*
KINGSTON	HX426C15FBK4/16	4*4GB	SS	Hynix	15-17-17-35	1.2	*	*
CRUCIAL	BL56G40268FA8FAD	4GB	SS	Micron	16-18-17-36	1.2	*	*
CRUCIAL	BL56G40268FA16FAD	8GB	DS	Micron	16-17-17-36	1.2	*	*
AVEXIR	AVD4UJ2126661504G-4COB	4*4GB	SS	N/A	15-15-15-36	1.2	*	*
AVEXIR	AVD4UJ2126661508G-4COB	4*8GB	DS	N/A	15-15-15-36	1.2	*	*
CRUCIAL	BLT4G40268FA7A8FADG	4GB	SS	Micron	16-17-17-36	1.2	*	*
KLEVV	IM44G0U8N26-FFFH4Z	8GB	DS	N/A	15-15-15-35	1.2	*	*
KINGSTON	HX426C13SB2K4/32	4*8GB	DS	Hynix	15-15-15-36	1.35	*	*
KINGSTON	HX426C13SB2K4/16	4*4GB	SS	Hynix	15-15-15-36	1.35	*	*
PNY	MD16GK404266615AXR	4*4GB	SS	N/A	15-15-15-35	1.2	*	*
AVEXIR	AVD4UJ2126661504G-4IPROG	4*4GB	DS	N/A	15-15-15-35	1.2	*	*
AVEXIR	AVD4UJ2126661504G	2*4GB	DS	N/A	15-15-15-35	1.2	*	*
CORSAIR	CMU32GX4M2A2666C16 (Ver5.20)	2*16GB	DS	Samsung	16-18-18-35	1.2	*	*
CORSAIR	CMK32GX4M4A2666C16(Ver5.20)	4*8GB	DS	N/A	16-18-18-35	1.2	*	*
CORSAIR	CMK16GX4M2A2666C16 (Ver3.31)	2*8GB	SS	Micron	16-18-18-35	1.2	*	*
CORSAIR	CMK32GX4M4A2666C16 (Ver5.30)	2*16GB	DS	N/A	16-18-18-35	1.2	*	*
CORSAIR	CMK16GX4M4A2666C15 (Ver5.20)	4*4GB	SS	N/A	15-17-17-35	1.2	*	*
CORSAIR	CMK64GX4M4A2666C16 (Ver5.3)	4*16GB	DS	Hynix	16-18-18-35	1.2	*	*
CORSAIR	CMK32GX4M4A2666C15 (Ver5.20)	4*8GB	DS	Hynix	15-17-17-35	1.2	*	*
TEAM	TF04D162666C15B8BK	16GB	DS	Samsung	15-17-17-35	1.2	*	*
TEAM	TFV04G02666C15B8BK	8GB	DS	Samsung	15-17-17-35	1.2	*	*
TEAM	TC04G2666C15B8BK	4GB	SS	Hynix	15-17-17-35	1.2	*	*
HyperX	HX426C15FBK2/16	2*8GB	DS	Micron	15-17-17-35	1.2	*	*
Klevv	IM48G0U8N26-FFFH4Z	8GB	SS	Hynix	15-15-15-35	1.2	*	*
Klevv	IM44G0U8N26-FFFH4Z	16GB	DS	N/A	15-15-15-35	1.2	*	*
Klevv	IM44G0U8N26-FFHAZ	4GB	SS	Hynix	15-15-15-35	1.2	*	*
CORSAIR	CMK16GX4M2A2666C16(Ver5.30)	8GB	SS	Hynix	16-18-18-35	1.2	*	*
ADATA	AX4U2666W016-BRZ	4GB	SS	Hynix	16-16-16-39	1.2	*	*
ADATA	AX4U2666W016-QRZ	4*8GB	DS	Hynix	16-16-16-39	1.2	*	*
crucial	BL58G40268FSC.16F8B2	8GB	SS	N/A	16-18-18-38	1.2	*	*
crucial	BL516G40268FSC.16F8BD	16GB	DS	Micron	16-18-18-38	1.2	*	*
crucial	BL58G40268FSC.8F8B2	4GB	SS	N/A	16-18-18-38	1.2	*	*
CORSAIR	CMK128GX4M8A2666C16(Ver5.39)	8*16GB	DS	Hynix	16-18-18-36	1.2	*	*
CORSAIR	CMR16GX4M4A2666C16(Ver5.30)	2*8GB	SS	Hynix	16-18-18-35	1.2	*	*
CORSAIR	CMR64GX4M8A2666C16(Ver5.30)	8*8GB	SS	N/A	16-18-18-35	1.2	*	*
HyperX	HX426C15FBK4/64	4*16GB	DS	Hynix	16-18-18-39	1.2	*	*
G.SKILL	F4-266616Q2-64GRB	8*8GB	SS	Hynix	16-16-16-36	1.2	*	*
HyperX	HX426C15SBK8/128	8*16GB	DS	N/A	16-18-16-35	1.2	*	*
HyperX	HX426C13PB3/8	4*8GB	SS	N/A	13-15-15-35	1.35	*	*
HyperX	HX426C13PB3K2/15	4*8GB	DS	N/A	13-15-15-35	1.35	*	*
HyperX	HX424C12PB3/8	4*8GB	SS	N/A	13-15-15-35	1.35	*	*
HyperX	HX424C12PB3K/15	4*8GB	SS	N/A	13-15-15-35	1.35	*	*
HyperX	HX424C12PB3K4/32	4*8GB	SS	N/A	13-15-15-35	1.35	*	*
HyperX	HX426C13PB3/16	4*16GB	DS	Hynix	13-15-15-35	1.35	*	*
HyperX	HX426C13PB3K2/32	4*16GB	DS	Hynix	13-15-15-35	1.35	*	*
HyperX	HX424C12PB3K4/64	4*16GB	DS	Hynix	13-15-15-35	1.35	*	*
HyperX	HX424C12PB3K/32	4*16GB	DS	Hynix	13-15-15-35	1.35	*	*
CRUCIAL	BL58G40268FSC.8F8B	8GB	SS	Micron	16-18-18-38	1.2	*	*
CRUCIAL	BL58G40268FSC.8F8BD	8GB	SS	Micron	16-18-18-38	1.2	*	*
MICRON	MT48ATF1J64AZ-2G6H1	8GB	SS	Hynix	19-19-19-43	1.2	*	*
TIGO	TMK32G0666-2666N	8GB	SS	N/A	19-19-19-43	1.2	*	*
ADATA	AX4U266638G16-BRS	8*8GB	SS	Hynix	16-16-16-39	1.2	*	*
ADATA	AD4U266638G19-B	8*8GB	SS	N/A	19-19-19-43	1.2	*	*
ADATA	AD4U266631G19-B	16*16GB	DS	N/A	19-19-19-43	1.2	*	*
PANRAM	WU1266PS-16G	2*16GB	DS	Hynix	16-18-18-35	1.2	*	*
PANRAM	WU1266PS-8G	2*8GB	DS	Hynix	16-18-18-35	1.2	*	*
Team	TPD416G2666HC19BK	16GB	DS	Micron	19-19-19-43	1.2	*	*
Team	TE0416G2666C1901	16GB	DS	Micron	19-19-19-43	1.2	*	*
Team	TPRD416G2666HC1901	16GB	DS	Micron	19-19-19-43	1.2	*	*
Team	TPD416G2666HC1901	16GB	DS	Micron	19-19-19-43	1.2	*	*
Team	TPD432G2666C190C01	16GB	DS	Micron	19-19-19-43	1.2	*	*
Team	TPRD432G2666HC190C01	16GB	DS	Micron	19-19-19-43	1.2	*	*
Team	TPD464G2666C190C01	16GB	DS	Micron	19-19-19-43	1.2	*	*
Team	TPD464G2666HC190C01	16GB	DS	Micron	19-19-19-43	1.2	*	*
Team	TPD48G2666HC19BK	8GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TE048G2666C1901	8GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPRD48G2666HC1901	8GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPD48G2666HC1901	8GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPD416G2666C190C01	8GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPRD416G2666HC190C01	8GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPD432G2666C190C01	8GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPRD432G2666HC190C01	8GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPD44G2666HC19BK	4GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TE044G2666C1901	4GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPRD44G2666HC1901	4GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPD44G2666HC1901	4GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPD48G2666C190C01	4GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPRD48G2666HC190C01	4GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPD48G2666HC190C01	4GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPRD416G2666HC190C01	4GB	SS	N/A	19-19-19-43	1.2	*	*
Team	TPD416G2666HC190C01	4GB	SS	N/A	19-19-19-43	1.2	*	*

2 DIMM Slots
For each DRAM channel (A,B), make sure to install the DRAM module to gray slot first.
• 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.
• 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.
- 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.
- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.

DDR4 2800 Qualified Vendors List (QVL)										
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage(V)	Pin Count	DIMM socket support (Optional)		
								1 DIMM	2 DIMM	
CORSAIR	CMK16GX4M4A2800C16(Ver5.29)	4*4GB	SS	N/A	16-18-18-36	1.2	DDR4-2666	●	●	
KINGSTON	HX428C14PB2K4/16	4*4GB	SS	Hynix	15-15-15-36	1.35	DDR4-2666	●	●	
PATRIOT	PV416G280C6QK	4*4GB	SS	N/A	16-18-18-36	1.2	DDR4-2666	●	●	
PANRAM	PUR42800C16A48JUNV	4*4GB	SS	N/A	16-18-18-36	1.25	DDR4-2666	●	●	
KINGSTON	HX428C14PBK4/32	4*8GB	DS	Hynix	15-15-15-36	1.35	DDR4-2666	●	●	
AVEXIR	AVD4UJ2128001604G-4C0B	4*4GB	SS	N/A	15-15-15-36	1.2	DDR4-2666	●	●	
AVEXIR	AVD4UJ2128001608G-4C0B	4*8GB	DS	N/A	15-15-15-36	1.2	DDR4-2666	●	●	
CORSAIR	CMK32GX4M4A2800C16	4*8GB	DS	N/A	16-18-18-36	1.2	DDR4-2666	●	●	
KINGSTON	HX428C14SB2K4/32	4*8GB	DS	N/A	15-15-15-36	1.35	DDR4-2666	●	●	
KINGSTON	HX428C14SBK4/16	4*4GB	SS	Hynix	15-15-15-36	1.35	DDR4-2666	●	●	
TEAM	TGDE48G2800HC16ABK	2*8GB	SS	Hynix	16-16-16-36	1.2	DDR4-2666	●	●	
PATRIOT	PV416G280C6QK	4*4GB	SS	N/A	16-18-18-36	1.2	DDR4-2666	●	●	
G.SKILL	F4-2800C16Q-16GBR	2*8GB	SS	Hynix	16-16-16-36	1.2	DDR4-2666	●	●	
ADATA	AX4U280038G17-SBF	8*8GB	SS	Hynix	18-17-17-36	1.2	DDR4-2666	●	●	
ADATA	AX4U2800316G16-SBF	16GB	DS	Hynix	17-16-16-36	1.2	DDR4-2666	●	●	
CORSAIR	CMD32GX4M4A2800C16 (Ver5.20)	8GB	DS	Hynix	16-18-18-36	1.2	DDR4-2666	●	●	
G.SKILL	F4-2800C14Q-64GVK	4*16GB	DS	Samsung	14-14-14-35	1.35	DDR4-2666	●	●	
G.SKILL	F4-2800C16Q-32GVR	4*8GB	SS	Hynix	16-16-16-36	1.2	DDR4-2666	●	●	
AVEXIR	AVD4UJ2128001504G-4B21RR	4*4GB	SS	Samsung	15-15-15-35	1.35	DDR4-2666	●	●	
AVEXIR	AVD4UJ2128001508G-4B21RR	4*8GB	DS	Samsung	15-15-15-35	1.35	DDR4-2666	●	●	
CORSAIR	CMD16GX4M4A2800C16(Ver3.21)	4*4GB	SS	Micron	16-18-18-36	1.2	DDR4-2666	●	●	
TEAM	TFW4216G2800C16CBK	16GB	DS	TEAM	16-18-18-38	1.2	DDR4-2666	●	●	
TEAM	TFRD48G2800C16CBK	8GB	DS	Samsung	16-18-18-38	1.2	DDR4-2666	●	●	
FORZA	NFMUD416E8-2800EH2A	16GB	DS	Hynix	17-17-17-36	1.2	DDR4-2666	●	●	
FORZA	NFMUD480E8-2800DH2A	8GB	SS	N/A	17-17-17-36	1.2	DDR4-2666	●	●	
ADATA	AX4U2800W8G17-8RD	8GB	DS	N/A	17-17-17-36	1.2	DDR4-2666	●	●	
G.SKILL	F4-2800C15Q-32GVR	4*8GB	SS	Hynix	15-15-15-35	1.25	DDR4-2666	●	●	
ADATA	AX4U2800W4G17-8RZ	2*4GB	SS	Hynix	17-17-17-36	1.2	DDR4-2666	●	●	
ADATA	AX4U280038G17-BWZ	8GB	SS	Hynix	17-17-17-36	1.2	DDR4-2666	●	●	
KINGMAX	GLMG42F-18K1A C1BR4	8GB	SS	KINGMAX	17-17-17-39	1.2	DDR4-2666	●	●	

2 DIMM Slots

For each DRAM channel (A/B), make sure to install the DRAM module to gray slot first.

- 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.
- 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.

- The default DIMM frequency depends on its Serial Presence Detect (SPD), which is the standard way of accessing informat

2

- 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.

- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.

DDR4 3000 Qualified Vendors List (QVL)										
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage(V)	Pin Count	DIMM socket support (Optional)		
								1 DIMM	2 DIMM	
CORSAIR	CMD32GX4M2B3000C15(Ver4.31)	2*16GB	DS	N/A	15-17-17-35	1.35	DDR4-2666	●	●	
KINGSTON	HX430C15PB2K4/16	4*4GB	SS	Hynix	15-15-15-36	1.35	DDR4-2666	●	●	
G.SKILL	F4-3000C15Q-16GBR	4*4GB	SS	Hynix	15-15-15-35	1.35	DDR4-2666	●	●	
PANRAM	PUR43000C15A48JUNV	4*4GB	SS	N/A	15-17-17-35	1.35	DDR4-2666	●	●	
KINGSTON	HX430C15SB2K4/2	4*8GB	DS	Hynix	15-15-15-36	1.35	DDR4-2666	●	●	
AVEXIR	AVD4UJ2130001604G-4C0B	4*4GB	SS	N/A	15-15-15-36	1.35	DDR4-2666	●	●	
AVEXIR	AVD4UJ2130001608G-4C0B	4*8GB	DS	N/A	15-15-15-36	1.35	DDR4-2666	●	●	
KINGSTON	HX430C15SBK2/16	2*8GB	DS	N/A	15-15-15-36	1.35	DDR4-2666	●	●	
KLEVV	IM44GU48A30-GIHMC	4*4GB	SS	N/A	17-18-18-36	1.35	DDR4-2666	●	●	
CORSAIR	CMK16GX4M2B3000C15 (Ver4.24)	2*8GB	DS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
KINGSTON	HX430C15SB2K4/16	4*4GB	SS	Hynix	15-15-15-36	1.35	DDR4-2666	●	●	
TEAM	TGDE48G3000HC16ABK	2*8GB	DS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●	
PATRIOT	PV416G300C6QK	4*4GB	SS	N/A	16-16-16-36	1.35	DDR4-2666	●	●	
G.SKILL	F4-3000C15D-32GVR	2*16GB	DS	N/A	15-15-15-35	1.35	DDR4-2666	●	●	
CORSAIR	CMK64GX4M4B3000C15 (Ver4.31)	4*16GB	DS	Samsung	15-17-17-35	1.35	DDR4-2666	●	●	
TEAM	TCD48G300C16ABK	8GB	SS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●	
ADATA	AX4U30008G16-DBZ	8*8GB	DS	Hynix	16-18-18-36	1.35	DDR4-2666	●	●	
ADATA	AX4U300016G16-8GZ	16GB	DS	N/A	16-18-18-36	1.35	DDR4-2666	●	●	
CORSAIR	CMD16GX4M4B3000C15(Ver4.24)	4GB	SS	Samsung	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CMK32GX4M2B3000C15(Ver5.39)	16GB	DS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CMU16GX4M2C3000C15 (Ver4.31)	8GB	SS	Samsung	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CMK16GX4M4B3000C15(Ver3.21)	4GB	SS	Micron	15-17-17-35	1.35	DDR4-2666	●	●	
G.SKILL	F4-3000C15Q-32GRK	4*8GB	DS	Samsung	15-15-15-35	1.35	DDR4-2666	●	●	
CORSAIR	CMK8GX4M2B3000C15(Ver3.21)	2*4GB	SS	Micron	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CMU92GX4M4C3000C15 (Ver5.3)	4*8GB	DS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
GEL	GFR416GB3000C15ADC	8GB	SS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
TEAM	TFW416G3000C16CBK	16GB	DS	Hynix	16-18-18-38	1.35	DDR4-2666	●	●	
TEAM	TFRD48G3000C16CBK	8GB	DS	Samsung	16-18-18-38	1.35	DDR4-2666	●	●	
TEAM	TCD44G3000C16CBK	4GB	SS	Hynix	16-18-18-38	1.35	DDR4-2666	●	●	
KleVV	IM4AGU88A30-FGGHMZ	16GB	DS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●	
KleVV	IM4AGU88A30-FGGHAZ	8GB	SS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●	
KleVV	IM4AGU88A30-FGGHMB	8GB	SS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●	
KleVV	IM4AGU88A30-FGGHAB	4GB	SS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●	
KleVV	IM4AGU88A30-FGGHMB	16GB	DS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●	
CORSAIR	CMD16GX4M2B3000C15(Ver5.39)	2* 8GB	SS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CMD32GX4M4C3000C15(Ver5.39)	4* 8GB	SS	N/A	15-17-17-35	1.35	DDR4-2666	●	●	
FORZA	NFMUD480E8-3000DH2A	8GB	SS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CMR16GX4M2C3000C15(Ver4.31)	2* 8GB	SS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CMR32GX4M4C3000C15	4* 8GB	DS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
Team	TRDR48G3000HC16CBK	8GB	DS	Samsung	16-18-18-38	1.35	DDR4-2666	●	●	
Team	TRDR48G3000HC16CBK	8GB	DS	Samsung	16-18-18-38	1.35	DDR4-2666	●	●	
GALAXY	HOF DDR4-3000	2* 8GB	SS	Hynix	16-18-18-38	1.35	DDR4-2666	●	●	
GelL	GLR416GB3000C15ADC	8GB	SS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
G.SKILL	F4-3000C15S-16GBR	16GB	DS	Hynix	15-15-15-35	1.35	DDR4-2666	●	●	
FORZA	NMUDJ416E82-3000DB30	16GB	DS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
FORZA	NMUD480E82-3000DB30	8GB	SS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
PATRIOT	PV432C300C6QK	4* 8GB	SS	N/A	16-16-16-36	1.35	DDR4-2666	●	●	
HyperX	HX430C15PB3K4/2	4* 8GB	SS	Hynix	15-17-17-36	1.35	DDR4-2666	●	●	
CRUCIAL	BL1T64D30AETA K1JFE	8GB	DS	Samsung	15-16-16-35	1.35	DDR4-2666	●	●	
PATRIOT	PVE416G300C6KBL	2* 8GB	SS	N/A	16-16-16-36	1.35	DDR4-2666	●	●	
PATRIOT	PVE48G300C6KRD	2*4GB	SS	N/A	16-16-16-36	1.35	DDR4-2666	●	●	
G.SKILL	F4-3000C14QZ-128GVKD	8*16GB	DS	Samsung	14-14-14-34	1.35	DDR4-2666	●	●	
Team	TF4D48G3000HC16CBK	8GB	SS	Hynix	16-18-18-38	1.35	DDR4-2666	●	●	
GALAXY	N/A	2*8GB	SS	Hynix	16-18-18-38	1.35	DDR4-2666	●	●	
TIGO	TMKURGF58-3000X	8GB	DS	Samsung	16-18-18-36	1.35	DDR4-2666	●	●	
CORSAIR	CMK16GX4M2B3000C15R (Ver5.30)	8GB*2	SS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CMK16GX4M2B3000C15R (Ver3.32)	8GB*2	SS	N/A	15-17-17-35	1.35	DDR4-2666	●	●	
CORSAIR	CM4X8GBD3000C15J4-CN(Ver5.39)	8GB	SS	Hynix	15-17-17-35	1.35	DDR4-2666	●	●	
ADATA	AX4U300038G16-BBG	8*8GB	SS	Hynix	16-18-18-36	1.35	DDR4-2666	●	●	
Hyper X	HX430C15PB3/8	8GB	SS	N/A	15-17-17-36	1.35	DDR4-2666	●	●	
Hyper X	HX430C15PB3K2/16	2*8GB	SS	N/A	15-17-17-36	1.35	DDR4-2666	●	●	
TEKISM	TX4300B8G17-HY	8GB	DS	N/A	17-17-17-36	1.35	DDR4-2666	●	●	
CORSAIR	CMK18GX4M2B3000C15 (Ver5.39)	2*8GB	SS	N/A	15-17-17-35	1.35	DDR4-2666	●	●	
G.SKILL	F4-3000C16D-16GTZR	2*8GB	SS	N/A	16-18-18-38	1.35	DDR4-2666	●	●	
GALAXY	GAM4IRL1BMR3000G16L0162C	2*8GB	SS	Micron	16-18-18-38	1.35	DDR4-2666	●	●	

2 DIMM Slots

For each DRAM channel (A/B), make sure to install the DRAM module to gray slot first.

- 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.
- 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.

- 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.

- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.

DDR4 3200 Qualified Vendors List (QVL)										
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage(V)	View Details	DIMM socket support (Optional)		
								1 DIMM	2 DIMM	
PANRAM	PUD43200C164G4NJW	4* 4GB	SS	N/A	16-18-18-39	1.35	DDR4-2666	●	●	
MUSHKIN	99720ZF	2*4GB	SS	N/A	15-15-15-36	1.2	DDR4-2666	●	●	
G.SKILL	F4-3200C16D-8GVKB	2*4GB	SS	Samsung	16-18-18-38	1.35	DDR4-2666	●	●	
APACER	78.BAGMD.AF209	2*4GB	SS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●	
PATRIOT	PV48G320C6K	2*4GB	SS	N/A	16-16-16-36	1.35	DDR4-2666	●	●	
HyperX	HX432C16PB3K4/32	4*8GB	SS	Hynix	16-18-18-36	1.35	DDR4-2666	●	●	
ADATA	AX4U3200W8G16-BG-Z	8GB	DS	Samsung	16-16-16-36	1.35	DDR4-2666	●	●	
TEAM	TFWD416G3200C16C8K	16GB	DS	Samsung	16-18-18-38	1.35	DDR4-2666	●	●	
TEAM	TFWD48G3200C16C8K	8GB	DS	Samsung	16-18-18-38	1.35	DDR4-2666	●	●	
G.SKILL	F4-3200C16D-16GTZR	2*8GB	SS	N/A	18-18-18-39	1.35	DDR4-2666	●	●	
G.SKILL	CM032GX4M2C3200C16(Ver5.39)	4*8GB	SS	Samsung	14-14-14-34	1.35	DDR4-2666	●	●	
CORSAIR	CMK16GX4M2B3200C16(Ver4.24)	2*16GB	DS	Hynix	16-18-18-36	1.35	DDR4-2666	●	●	
CORSAIR	CMU16GX4M2C3200C16(Ver5.39)	8*8GB	SS	N/A	16-18-18-36	1.35	DDR4-2666	●	●	
Team	CMK32GX4M2B3200C16(Ver5.39)	8GB	SS	Hynix	16-18-18-38	1.35	DDR4-2666	●	●	
CORSAIR	CMK64GX4MB83200C16(Ver4.31)	2*8GB	DS	Samsung	16-18-18-36	1.35	DDR4-2666	●	●	
G.SKILL	CMK16GX4M2B3200C16(Ver4.24)	2*8GB	DS	N/A	16-16-16-36	1.35	DDR4-2666	●	●	
CORSAIR	CMU16GX4M2C3200C16(Ver5.39)	2*8GB	SS	Hynix	16-18-18-36	1.35	DDR4-2666	●	●	
G.SKILL	F4-3200C16S-8GRKB	8GB	SS	N/A	16-18-18-36	1.35	DDR4-2666	●	●	
CORSAIR	CMU32GX4M2C3200C16(Ver5.39)	2*16GB	DS	Hynix	16-18-18-36	1.35	DDR4-2666	●	●	
Hyper X	HX432C16PB3K2/16	2*8GB	SS	Hynix	16-18-18-36	1.35	DDR4-2666	●	●	

- 2 DIMM Slots
For each DRAM channel (A,B), make sure to install the DRAM module to gray slot first.
- 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.
 - 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.
- 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.
- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.

DDR4 3300 Qualified Vendors List (QVL)									
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage(V)	View Details	DIMM socket support (Optional)	
								1 DIMM	2 DIMM
ADATA	AX4U3333W4G16-QC-Z	4*8GB	SS	N/A	16-16-16-36	1.35	DDR4-2666	●	●
HyperX	HX432C16PB3K2/16	2*8GB	SS	N/A	16-18-18-36	1.35	DDR4-2666	●	●
G.SKILL	F4-3300C16Q-16GRKD	4*4GB	SS	Hynix	16-16-16-36	1.35	DDR4-2666	●	●
CORSAIR	CMR32GX4M4C3333C16(Ver4.31)	4*8GB	SS	Samsung	16-18-18-35	1.35	DDR4-2666	●	●

- 2 DIMM Slots
For each DRAM channel (A,B), make sure to install the DRAM module to gray slot first.
- 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.
 - 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.
- 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.
- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.

DDR4 3400 Qualified Vendors List (QVL)									
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage(V)	View Details	DIMM socket support (Optional)	
								1 DIMM	2 DIMM
GEIL	GLWR416GBS400C16AQOC	4*4GB	SS	N/A	16-18-18-36	1.35	DDR4-2666	●	●
G.SKILL	F4-3400C16Q-16GRBD	4*4GB	SS	Samsung	16-18-18-38	1.35	DDR4-2666	●	●
G.SKILL	F4-3466C16Q-16GVK	4*4GB	SS	N/A	16-18-18-38	1.35	DDR4-2666	●	●
CORSAIR	CMD16GX4MB3466C18 (Ver4.23)	4*4GB	SS	N/A	18-19-19-39	1.35	DDR4-2666	●	●
PATRIOT	CMD32GX4M2B3466C16(Ver4.31)	2*4GB	SS	Samsung	17-18-18-36	1.35	DDR4-2666	●	●
CORSAIR	CMU32GX4M4C3400C16R (Ver5.20)	4*8GB	SS	Samsung	16-18-18-36	1.35	DDR4-2666	●	●
CORSAIR	CMD32GX4M2B3466C16(Ver4.31)	2*16GB	DS	Samsung	16-18-18-36	1.35	DDR4-2666	●	●
CORSAIR	CMR16GX4M2C3466C16(Ver4.31)	2*8GB	SS	Samsung	16-18-18-36	1.35	DDR4-2666	●	●
G.SKILL	F4-3466C16Q2-64GTZ	8* 8GB	SS	N/A	16-18-18-38	1.35	DDR4-2666	●	●

- 2 DIMM Slots
For each DRAM channel (A,B), make sure to install the DRAM module to gray slot first.
- 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.
 - 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.
- 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.
- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.

DDR4 3600+ Qualified Vendors List (QVL)									
Vendors	Part No.	Size	SS/DS	Chip Brand	Timing	Voltage(V)	View Details	DIMM socket support (Optional)	
								1 DIMM	2 DIMM
G.SKILL	F4-3600-C17Q-16GVK	4*4GB	SS	N/A	17-18-18-38	1.35	DDR4-2666	●	●
GALAXY	HOF4CALCS3600K17LD162C	2*8GB	SS	Samsung	17-18-18-38	1.35	DDR4-2666	●	●
CORSAIR	CMDB9GX4M2B3600C18 (Ver4.24)	2*4GB	SS	Samsung	18-19-19-39	1.35	DDR4-2666	●	●
CORSAIR	CMDB9GX4M2B3733C17 (Ver4.24)	2*4GB	SS	N/A	17-19-19-39	1.35	DDR4-2666	●	●
G.SKILL	F4-3686C18Q-16GTZ	4*4GB	SS	Samsung	18-22-22-42	1.35	DDR4-2666	●	●
G.SKILL	F4-4000C19D-8GTZ	2*4GB	SS	Samsung	19-21-21-41	1.35	DDR4-2666	●	●
G.SKILL	F4-4000C19D-16GTZSW	2*8GB	SS	Samsung	19-21-21-41	1.35	DDR4-2666	●	●
G.SKILL	F4-2666C19D-16GTZKW	2*8GB	SS	Samsung	19-19-19-39	1.4	DDR4-2666	●	●
G.SKILL	F4-4000C19D-16GTZSW	2*8GB	SS	Samsung	19-19-19-39	1.4	DDR4-2666	●	●
G.SKILL	F4-4600C19D-16GTZWC	2*8GB	SS	Samsung	19-23-23-43	1.5	DDR4-2666	●	●
G.SKILL	F4-4600C19D-16GTZKKA	2*8GB	SS	Samsung	19-19-19-39	1.45	DDR4-2666	●	●
GALAXY	HOF4CX1BSR3600K17LD162C	2*8GB	SS	Samsung	17-18-18-38	1.35	DDR4-2666	●	●
KINGSTON	HX436C17PB3K4/32	4*8GB	SS	Samsung	17-18-18-39	1.35	DDR4-2666	●	●

- 2 DIMM Slots
For each DRAM channel (A,B), make sure to install the DRAM module to gray slot first.
- 1 DIMM: Supports one (1) module inserted into any gray slot as Single-channel memory configuration.
 - 2 DIMMs: Supports two (2) modules inserted into one pair of gray slots as one pair of Dual-channel memory configuration.

- Make sure to install the memory modules from the gray slots first.
- 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.
- DDR4 2666MHz and higher memory modules will run at max. 2666MHz on Intel® 8th Generation 6-core or higher processors.