DDR4 2133 Qualified Vendors List (QVL)											
Vendors	Part No.	Sizo	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket su	oport (Optional)		
vendors	rait No.	Size	33/03	Chip Brand			voltage	1 DIMM	2 DIMM		
SAMSUNG	M378A5143DB0CPB	4G	SS	SEC 428 BCPB	K4A4G085WD	13-13-13-39	1.5V	•	•		
SAMSUNG	M378A1G43DB0CPB	8G	DS	SEC 428 BCPB	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		1.2V	•	•		
PANRAM	PUD42133C134G4NJW	4G	SS	N/A	Heat-Sink Package		1.2V	•	•		
CORSAIR	CMK16GX4M4A2133C15	4G	SS	N/A	Heat-Sink Package	15-15-15-36	1.2V	•	•		
CORSAIR	CMV4GX4M1A2133C15	4G	SS	N/A	4GA72Z9RGR	13-13-13-33	1.5V	•	•		
CORSAIR	CMV8GX4M1A2133C15	8G	DS	SEC 446 BCPB	K4A4G085WD	13-13-14-33	1.5V	•	•		
CRUCIAL	MTA8ATF51264AZ-2G1A1	4G	SS	MICRON	4QA77D9RCQ	13-13-13-33	1.2V	•	•		
TEAM	TED44GM2133C15BK	4G	DS	SEC 443 BCBP	K4A4G085WD	15-15-15-36	1.2V	•	•		
TEAM	TED48GM2133C15BK	8G	SS	SEC 437BCBP	K4A4G085WD	15-15-15-36	1.2V	•	•		
APACER	78.C1GM3.AF10B	8G	DS	SK HYNIX	H5AN4G8NMFR	14-14-14-33	1.5V	•	•		
APACER	AU04GGB13CDTBGC	4G	SS	SK HYNIX	H5AN4G8NMFR	14-14-14-33	1.5V	•	•		
TEKISM	T4U2133B8G15-SAD	8G	DS	SEC 446 BCPB	K4A4G085WD			•	•		
CENTURY	PX4-17000	8G	DS	SK HYNIX	H5AN4G8NMFR			•	•		
KINGSTON	KVR21N15S8/4	4G	SS	SK HYNIX	H5AN4G8NMFR		1.2V	•	•		
KINGSTON	KVR21N15D8/8	8G	DS	SK HYNIX	H5AN4G8NMFR		1.2V	•	•		
G.SKILL	F4-2133C15Q-16GRB	4G	SS	N/A	Heat-Sink Package	15-15-15-35	1.2V	•	•		

- 1 DIMM: Supports one module inserted in any slot as Single-channel memory configuration
- 2 DIMM: Supports 2 modules inserted into both the blue or 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.

DDR4 2400 Qualified Vendors List (QVL)											
Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket su	oport (Optional)		
	r art 110.	OILO	00/00			19	Voltago	1 DIMM	2 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	•	•		
G.SKILL	F4-2400C14Q2-128GRK	16G	DS	N/A	Heat-Sink Package	14-14-14-34	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 BCPB	K4A4G085WD	16-16-16-39	1.2V	•	•		
TEAM	TED48GM2400C16BK	8G	DS	SEC 443 BCPB	K4A4G085WD	16-16-16-39	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	15-15-15-35-50	1.2V	•	•		
KINGSTON	HX424C15FBK4/32	8G	DS	N/A	Heat-Sink Package	15-15-15-35-57	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	F4-2400C14Q-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	•	•		

- 1 DIMM: Supports one module inserted in any slot as Single-channel memory configuration
- 2 DIMM: Supports 2 modules inserted into both the blue or 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.

DDR4 2666 Qualified Vendors List (QVL)										
Vendors	Part No.		SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)		
Vendors			33/03	Chip Brand	Chip No.	riiiiiig	Voltage	1 DIMM	2 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	CMD128GX4MM8A2666C15	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	PX416G266C5QK	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 BCPB	K4A4G085WD	15-15-15-35	1.2V	•	•	
MUSHKIN	997192F	4G	SS	N/A	Heat-Sink Package	15-15-15-35-50	1.2V	•	•	
KINGSTON	HX426C13PBK4/32	8G	DS	N/A	Heat-Sink Package	13-14-14-39-60	1.35V	•	•	
KINGSTON	HX426C15FBK4/32	8G	DS	N/A	Heat-Sink Package		1.2V	•	•	
CRUCIAL	BLE4G4D26AFEA.8FAD	8G	SS	N/A	Heat-Sink Package	16-16-17-36	1.2V	•	•	
CRUCIAL	BLE8G4D26AFEA.16FAD	8G	DS	N/A	Heat-Sink Package	16-16-17-36	1.2V	•	•	

- 1 DIMM: Supports one module inserted in any slot as Single-channel memory configuration
- 2 DIMM: Supports 2 modules inserted into both the blue or 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.

DDR4 2800 Qualified Vendors List (QVL)											
Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)			
							Voltage	1 DIMM	2 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	PX416G280C6QK	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	16-16-16-36-52	1.2V	•	•		
KINGSTON	HX428C14PBK/32	8G	DS	N/A	Heat-Sink Package	14-15-15-39-63	1.35V	•	•		

- 1 DIMM: Supports one module inserted in any slot as Single-channel memory configuration
- 2 DIMM: Supports 2 modules inserted into both the blue or 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.

DDR4 3000 Qualified Vendors List (QVL)											
Vendors	Part No.	Cizo	99/D9	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket su	ipport (Optional)		
Vendors	rait NO.	3126	33/03			rilling	Voltage	1 DIMM	2 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	15-16-16-39-65	1.35V	•	•		

- 1 DIMM: Supports one module inserted in any slot as Single-channel memory configuration
- 2 DIMM: Supports 2 modules inserted into both the blue or 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.

DDR4 3200+ Qualified Vendors List (QVL)											
Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	DIMM socket support (Optional)			
Vendors		3126	33/03		Cilip NO.	rilling	voitage	1 DIMM	2 DIMM		
PANRAM	PUD43200C164G4NJW	4G	SS	N/A	Heat-Sink Package	16-18-18-39	1.35V	•	•		
MUSHKIN	997202F(3200)	4G	SS	N/A	Heat-Sink Package	16-16-16-36-50	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	•	•		
ADATA	AX4U3333W4G16-QGZ	4G	SS	N/A	Heat-Sink Package	161-16-16	1.35V	•	•		
GEIL	GLWR416GB3400C16AQC	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	F4-3600-C17Q-16GVK	4G	SS	N/A	Heat-Sink Package	17-18-18-38	1.35V	•	•		

- 1 DIMM: Supports one module inserted in any slot as Single-channel memory configuration
- 2 DIMM: Supports 2 modules inserted into both the blue or 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.