

**DDR3 1067 Qualified Vendors List (QVL)**

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	ocket support (O	
								1 DIMM	2 DIMM
<b>Crucial</b>	CT12864BA1067.8FF	1GB	SS	Micron	9GF22D9KPT	7	-	•	•
<b>Crucial</b>	CT25664BA1067.16FF	2GB	DS	Micron	9HF22D9KPT	7	-	•	•
<b>ELPIDA</b>	EBJ10UE8EDF0-AE-F	1GB	SS	ELPIDA	J1108EDSE-DJ-F	-	1.35V(low voltage)	•	•
<b>ELPIDA</b>	EBJ21UE8EDF0-AE-F	2GB	DS	ELPIDA	J1108EDSE-DJ-F	-	1.35V(low voltage)	•	•
<b>KINGSTON</b>	KVR1066D3N7/1G(矮版)	1GB	SS	ELPIDA	J1108BFSE-DJ-F	7	1.5V	•	•
<b>KINGSTON</b>	KVR1066D3N7/2G	2GB	DS	ELPIDA	J1108BDSE-DJ-F	7	1.5V	•	•
<b>KINGSTON</b>	KVR1066D3N7/4G	4GB	DS	Hynix	H5TQ2G83AFR	7	1.5V	•	•
<b>Micron</b>	MT8JTF12864AZ-1G1F1	1GB	SS	Micron	9GF22D9KPT	7	-	•	•
<b>Micron</b>	MT16JTF25664AZ-1G1F1	2GB	DS	Micron	9HF22D9KPT	7	-	•	•
<b>Vendor</b>	PartNum.	Size	SS/DS	Chip Brand	ChipNum.	Timing - Dimm	Vol.		

**DDR3 1333 Qualified Vendors List (QVL)**

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	ocket support (O	
								1 DIMM	2 DIMM
<b>A-DATA</b>	SU3U1333W8G9-B	8GB	DS	ELPIDA	J4208BASE-DJ-F	-	-	•	•
<b>SAMSUNG</b>	M378B1G73AH0-CH9	8GB	DS	SAMSUNG	K4B4G0846A-HCH9	-	-	•	•
<b>Transcend</b>	TS1GLK64V3H	8GB	DS	Micron	IVD22D9PBC	-	-	•	•
<b>PATRIOT</b>	PG38G1333EL(XMP)	8GB	DS	-	-	9-9-9-24	1.5V	•	•
<b>Vendor</b>	PartNum.	Size	SS/DS	Chip Brand	ChipNum.	Timing - Dimm	Vol.	0	0

**DDR3 1600 Qualified Vendors List (QVL)**

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	Socket support (O)
								1 DIMM 2 DIMM
A-DATA	AM2U16BC2P1	2GB	SS	A-DATA	3CCD-1509A EL1126T	-	-	< <
A-DATA	AD31600E001GM(O)U3K	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65V-1.85V	< <
A-DATA	AX3U1600XB2G79-2X(XMP)	4GB(2 x 2GB)	DS	-	-	7-9-7-21	1.55V-1.75V	< <
A-DATA	AM2U16BC4P2	4GB	DS	A-DATA	3CCD-1509A EL1126T	-	-	< <
A-DATA	AX3U1600GC4G9-2G(XMP)	8GB(2 x 4GB)	DS	-	-	9-9-9-24	1.55V-1.75V	< <
A-DATA	AX3U1600XC4G79-2X(XMP)	8GB(2 x 4GB)	DS	-	-	7-9-7-21	1.55V-1.75V	< <
CORSAIR	TR3X3G1600C8D(XMP)	3GB(3 x 1GB)	SS	-	-	8-8-8-24	1.65V	< <
CORSAIR	CMD12GX3M6A1600C8(XMP)	12GB(6x2GB)	DS	-	-	8-8-8-24	1.65V	< <
CORSAIR	CMZ32GX3M4X1600C10(XMP)	32GB(8GBx4)	DS	-	-	10-10-10-27	1.50V	< <
CORSAIR	CMP4GX3M2A1600C8(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.65V	< <
CORSAIR	CMP4GX3M2A1600C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	< <
CORSAIR	CMP4GX3M2C1600C7(XMP)	4GB(2 x 2GB)	DS	-	-	7-8-7-20	1.65V	< <
CORSAIR	CMX4GX3M2A1600C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	< <
CORSAIR	CMX4GX3M2A1600C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	< <
CORSAIR	TR3X6G1600C8 G(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8-24	1.65V	< <
CORSAIR	TR3X6G1600C8D G(XMP)	6GB(3 x 2GB)	DS	-	-	8-8-8-24	1.65V	< <
CORSAIR	TR3X6G1600C9 G(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65V	< <
CORSAIR	CMP8GX3M2A1600C9(XMP)	8GB(2 x 4GB)	DS	-	-	9-9-9-24	1.65V	< <
CORSAIR	CMZ8GX3M2A1600C7R(XMP)	8GB(2 x 4GB)	DS	-	-	7-8-7-20	1.50V	< <
CORSAIR	CMX8GX3M4A1600C9(XMP)	8GB(4 x 2GB)	DS	-	-	9-9-9-24	1.65V	< <
Crucial	BL25664BN1608.16FF(XMP)	6GB(3 x 2GB)	DS	-	-	-	-	< <
G.SKILL	F3-12800CL9D-2GBNQ(XMP)	2GB(2 x 1GB)	SS	-	-	9-9-9-24	1.5V	< <
G.SKILL	F3-12800CL7D-4GBRH(XMP)	4GB(2 x 2GB)	SS	-	-	7-7-7-24	1.6V	< <
G.SKILL	F3-12800CL7D-4GBECO(XMP)	4GB(2 x 2GB)	DS	-	-	7-7-8-24	XMP 1.35V	< <
G.SKILL	F3-12800CL7D-4GBRM(XMP)	4GB(2 x 2GB)	DS	-	-	7-8-7-24	1.6V	< <
G.SKILL	F3-12800CL8D-4GBRM(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.60V	< <
G.SKILL	F3-12800CL9D-4GBECO(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	XMP 1.35V	< <
G.SKILL	F3-12800CL9D-4GBRL(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.5V	< <
G.SKILL	F3-12800CL9T-6GBNQ(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.5V~1.6V	< <
G.SKILL	F3-12800CL7D-8GBRH(XMP)	8GB(2 x 4GB)	DS	-	-	7-8-7-24	1.6V	< <
G.SKILL	F3-12800CL8D-8GBECO(XMP)	8GB(2 x 4GB)	DS	-	-	8-8-8-24	XMP 1.35V	< <
G.SKILL	F3-12800CL9D-8GBRL(XMP)	8GB(2 x 4GB)	DS	-	-	9-9-9-24	1.5V	< <
GEIL	GET316GB1600C9QC(XMP)	16GB(4x4GB)	DS	-	-	9-9-9-28	1.6V	< <
GEIL	GV34GB1600C8DC(XMP)	2GB	DS	-	-	8-8-8-28	1.6V	< <
HYNIX	HMT351U6CFR8C-PB	4GB	DS	HYNIX	H5TQ2G83CFR PBC	-	-	< <
KINGMAX	FLGD45F-B8MF7 MAEH(XMP)	1GB	SS	-	-	7	-	< <
KINGMAX	FLGE85F-B8KJ9A FEIS(XMP)	2GB	DS	-	-	-	-	< <
KINGMAX	FLGE85F-B8MF7 MEEH(XMP)	2GB	DS	-	-	7	-	< <
KINGSTON	KHX1600C9D3P1K2/4G	4GB(2 x 2GB)	SS	-	-	-	1.5V	< <
KINGSTON	KHX1600C9D3K3/12GX(XMP)	12GB(3x4GB)	DS	-	-	9-9-9-27	1.65V	< <
KINGSTON	KHX1600C9D3T1BK3/12GX(XMP)	12GB(3x4GB)	DS	-	-	9-9-9-27	1.65V	< <
KINGSTON	KHX1600C9D3K4/16GX(XMP)	16GB(4GBx4)	DS	-	-	-	1.65V	< <
KINGSTON	KHX1600C9AD3/2G	2GB	DS	-	-	-	1.65V	< <
KINGSTON	KVR1600D3N11/2G-ES	2GB	DS	KTC	D1288JPNDPLD9U	11-11-11-28	1.35V-1.5V	< <
KINGSTON	KHX1600C7D3K2/4GX(XMP)	4GB ( 2x 2GB )	DS	-	-	-	1.65V	< <
KINGSTON	KHX1600C8D3K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	8	1.65V	< <
KINGSTON	KHX1600C8D3T1K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	8	1.65V	< <
KINGSTON	KHX1600C9D3K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9	1.65V	< <
KINGSTON	KHX1600C9D3LK2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9	XMP 1.35V	< <
KINGSTON	KHX1600C9D3X2K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-27	1.65V	< <
KINGSTON	KHX1600C9D3T1K3/6GX(XMP)	6GB ( 3x 2GB )	DS	-	-	-	1.65V	< <
KINGSTON	KHX1600C9D3K3/6GX(XMP)	6GB(3 x 2GB)	DS	-	-	9	1.65V	< <
KINGSTON	KHX1600C9D3T1BK3/6GX(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-27	1.65V	< <
KINGSTON	KHX1600C9D3K2/8GX(XMP)	8GB(2 x 4GB)	DS	-	-	9-9-9-27	1.65V	< <
KINGSTON	KHX1600C9D3P1K2/8G	8GB(2 x 4GB)	DS	-	-	-	1.5V	< <
Super Talent	WA160UX6G9	6GB(3 x 2GB)	DS	-	-	9	-	< <
Transcend	JM1600KLN-8GK	8GB(4GBx2)	DS	Transcend	TK483PCW3	-	-	< <
AMD	AE32G1609U1-U	2GB	SS	-	23EY4587MB6H11503M	9-9-9-24	1.5V	< <
AMD	AE34G1609U2-U	4GB	DS	AMD	23EY4587MB6H11503M	9-9-9-24	1.5V	< <
Asint	SLZ302G08-EGN1C	4GB	SS	Asint	SLZ302G08-GN1C	-	-	< <
Asint	SLZ3128M8-EGJ1D(XMP)	2GB	DS	Asint	3128M8-GJ1D	9-9-9-24	1.6V	< <
Asint	SLA302G08-EGG1C(XMP)	4GB	DS	Asint	302G08-GG1C	-	-	< <
Asint	SLA302G08-EGJ1C(XMP)	4GB	DS	Asint	302G08-GJ1C	-	-	< <
Asint	SLA302G08-EGN1C	4GB	DS	Asint	SLA302G08-GN1C	-	-	< <
Asint	SLB304G08-EGN1B	8GB	DS	Asint	SLB304G08-GN1B	-	-	< <
Elixir	M2P2G64CB8HC9N-DG(XMP)	2GB	DS	-	-	-	-	< <
Mushkin	998659(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	-	< <
Mushkin	998659(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.5-1.6V	< <
PATRIOT	PGD316G1600ELK(XMP)	32GB(8GBx4)	DS	-	-	9-9-9-24	1.65V	< <
PATRIOT	PGS34G1600LLKA	4GB(2 x 2GB)	DS	-	-	7-7-7-20	1.7V	< <
SanMax	SMD-4G68HP-16KZ	4GB	DS	HYNIX	H5TQ2G83BFR PBC	-	-	< <
Silicon Power	SP002GBLTU160V02(XMP)	2GB	SS	S-POWER	20YT5NG-1201	-	-	< <
Silicon Power	SP004GBLTU160V02(XMP)	4GB	DS	S-POWER	20YT5NG-1201	-	-	< <
Vendor	PartNum.	Size	SS/DS	Chip Brand	ChipNum.	Timing	Vol.	

4 DIMM Slots

• **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 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.

### DDR3 1866 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	Socket support (O)	
								1 DIMM	2 DIMM
A-DATA	AX3U1866PB2G8-DP2(XMP)	2GB	DS	-	-	8-8-8-24	1.55V-1.75V		
CORSAIR	CMT4GX3M2A1866C9(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	CMT6GX3MA1866C9(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
CORSAIR	CMZ8GX3M2A1866C9(XMP)	8GB(2 x 4GB)	DS	-	-	9-10-9-27	1.50V	•	•
G.SKILL	F3-14900CL9Q-16GBZL(XMP1.3)	16GB ( 4GB x 4 )	DS	-	-	9-10-9-28	1.5V	•	•
G.SKILL	F3-14900CL10Q2-64GBZLD(XMP1.3)	64GB ( 8GB x 8 )	DS	-	-	10-11-10-30	1.5V	•	•
G.SKILL	F3-14900CL9D-8GBXL(XMP)	8GB(2 x 4GB)	DS	-	-	9-10-9-28	1.5V	•	•
G.SKILL	F3-14900CL9Q-8GBXL(XMP)	8GB(2GBx4)	DS	-	-	9-9-9-24	1.6V	•	•
KINGSTON	KHX1866C9D3T1K3/3GX(XMP)	3GB(3 x 1GB)	SS	-	-	-	1.65V	•	•
KINGSTON	KHX1866C9D3K4/16GX(XMP)	16GB ( 4GB x 4 )	DS	-	-	-	1.65V	•	•
KINGSTON	KHX1866C9D3T1K3/6GX(XMP)	6GB(3 x 2GB)	DS	-	-	-	1.65V	•	•
KINGSTON	KHX1866C11D3P1K2/8G	8GB ( 4GB x 2 )	DS	-	-	-	1.5V	•	•
Vendor	PartNum.	Size	SS/DS	Chip Brand	Chipnum	Timing - Dimm	Vol.		

### DDR3 2000 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	Socket support (O)	
								1 DIMM	2 DIMM
Apacer	78.AAGD5.9KD(XMP)	6GB(3 x 2GB)	DS	-	-	9-9-9-27	1.65V	•	•
CORSAIR	CMZ4GX3M2A2000C10(XMP)	4GB(2 x 2GB)	SS	-	-	10-10-10-27	1.50V	•	•
CORSAIR	CMT6GX3M3A2000C8(XMP)	6GB(3 x 2GB)	DS	-	-	8-9-8-24	1.65V	•	•
G.SKILL	F3-16000CL9D-4GBFLS(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-24	1.65V	•	•
G.SKILL	F3-16000CL9D-4GBTD(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-27	1.65V	•	•
G.SKILL	F3-16000CL6T-6GBPIS(XMP)	6GB (3x 2GB )	DS	-	-	6-9-6-24	1.65V	•	•
GEIL	GUP34GB2000C9DC(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-28	1.65V		
KINGSTON	KHX2000C9AD3T1K2/4GX(XMP)	4GB ( 2x 2GB )	DS	-	-	-	1.65V	•	•
KINGSTON	KHX2000C9AD3W1K2/4GX(XMP)	4GB ( 2x 2GB )	DS	-	-	-	1.65V	•	•
KINGSTON	KHX2000C9AD3T1K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9	1.65V	•	•
KINGSTON	KHX2000C9AD3W1K3/6GX(XMP)	6GB ( 3x 2GB )	DS	-	-	-	1.65V	•	•
KINGSTON	KHX2000C9AD3T1K3/6GX(XMP)	6GB (3x 2GB )	DS	-	-	-	1.65V	•	•
Transcend	TX2000KLN-8GK(XMP)	8GB(2 x 4GB)	DS	-	-	-	1.6V	•	•
Asint	SLA302G08-ML2HB(XMP)	4GB	DS	HYNIX	H5TQ2G83BFRH9C	-	-	•	•
PATRIOT	PVT36G2000LLK	6GB(3 x 2GB)	DS	-	-	8-8-8-24	1.65V		
Vendor	PartNum.	Size	SS/DS	Chip Brand	Chipnum	Timing - Dimm	Vol.		

### DDR3 2133 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	Socket support (O)	
								1 DIMM	2 DIMM
A-DATA	AX3U2133GC2G9B-DG2(XMP)	2GB	SS	-	-	9-11-9-27	1.55~1.75V	•	•
CORSAIR	CMT16GX3M4X2133C9(XMP 1.3)	16GB ( 4GB x 4 )	DS	-	-	9-11-10-27	1.50V	•	•
CORSAIR	CMT4GX3M2A2133C9(XMP)	4GB(2x 2GB)	DS	-	-	9-10-9-24	1.65V	•	•
CORSAIR	CMT4GX3M2B2133C9(XMP)	4GB(2x 2GB)	DS	-	-	9-10-9-27	1.50V	•	•
CORSAIR	CMT8GX3M2B2133C9(XMP)	8GB ( 4GB x 2 )	DS	-	-	9-11-9-27	1.50V	•	•
G.SKILL	F3-17000CL9Q-16GBZH(XMP1.3)	16GB ( 4GB x 4 )	DS	-	-	9-11-10-28	1.65V	•	•
GEIL	GE34GB2133C9DC(XMP)	2GB	DS	-	-	9-9-9-28	1.65V	•	•
GEIL	GU34GB2133C9DC(XMP)	4GB(2 x 2GB)	DS	-	-	9-9-9-28	1.65V	•	•
KINGSTON	KHX2133C9AD3T1K2/4GX(XMP)	4GB ( 2x 2GB )	DS	-	-	-	1.65V	•	•
KINGSTON	KHX2133C9AD3X2K2/4GX(XMP)	4GB(2 x 2GB)	DS	-	-	9-11-9-27	1.65V	•	•
KINGSTON	KHX2133C9AD3T1K4/8GX(XMP)	8GB(4 x 2GB)	DS	-	-	9-11-9-27	1.65V	•	•
KINGSTON	KHX2133C9AD3T1K4/8GX(XMP)	8GB(4x 2GB)	DS	-	-	-	1.65V	•	•
Vendor	PartNum.	Size	SS/DS	Chip Brand	Chipnum	Timing - Dimm	Vol.		

### DDR3 2200 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	Socket support (O)	
								1 DIMM	2 DIMM
G.SKILL	F3-17600CL8D-4GBPS(XMP)	4GB(2 x 2GB)	DS	-	-	8-8-8-24	1.65V		
GEIL	GET34GB2200C9DC(XMP)	2GB	DS	-	-	9-10-9-28	1.65V	•	•
GEIL	GET38GB2200C9ADC(XMP)	4GB	DS	-	-	9-11-9-28	1.65V	•	•
KINGMAX	FLKE85F-B8KJAA-FEIS(XMP)	2GB	DS	-	-	-	-	•	•
KINGMAX	FLKE85F-B8KHA EEIH(XMP)	4GB(2 x 2GB)	DS	-	-	-	1.5V-1.7V		
KINGMAX	FLKE85F-B8KJA FEIH(XMP)	4GB(2 x 2GB)	DS	-	-	-	1.5V-1.7V	•	•
Vendor	PartNum.	Size	SS/DS	Chip Brand	Chipnum	Timing - Dimm	Vol.		

### DDR3 2250 Qualified Vendors List (QVL)

Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	Socket support (O)	
								1 DIMM	2 DIMM
KINGSTON	KHX2250C9D3T1K2/4GX(XMP)	4GB ( 2x 2GB )	DS	-	-	-	1.65V	•	•

Vendor	PartNum.	Size	SS/DS	Chip Brand	Chip NO.	Timing - Dimm	Vol.	ocket support (O	
<b>DDR3 2400 Qualified Vendors List (QVL)</b>									
Vendors	Part No.	Size	SS/DS	Chip Brand	Chip NO.	Timing	Voltage	1 DIMM	2 DIMM
<b>CORSAIR</b>	CMGTX8(XMP)	8GB (2GBx 4)	SS	-	-	10-12-10-27	1.65V	•	•
<b>G.SKILL</b>	F3-19200CL11Q-16GBZHD(XMP1.3)	16GB (4GB x 4)	DS	-	-	11-11-11-31	1.65V	•	•
<b>G.SKILL</b>	F3-19200CL9D-4GBPIS(XMP)	4GB(2x 2GB)	DS	-	-	9-11-9-28	1.65V	•	•
<b>GEIL</b>	GET34GB2400C9DC(XMP)	2GB	DS	-	-	9-11-9-27	1.65V	•	•
<b>KINGMAX</b>	FLLE88F-C8KKA H AIS(XMP)	2GB	SS	-	-	10-11-10-30	1.8V	•	•
<b>Transcend</b>	TX2400KLU-4GK(427652)(XMP)	4GB(2 x 2GB)	SS	-	-	-	1.65V	•	•
<b>Transcend</b>	TX2400KLU-4GK (381850)(XMP)	4GB(2x 2GB)	SS	-	-	9	1.65V	•	•
<b>Transcend</b>	TX2400KLU-4GK(374243)(XMP)	4GB(2x 2GB)	DS	-	-	9	1.65V	•	•
<b>PATRIOT</b>	PVV34G2400C9K(XMP)	4GB(2x 2GB)	DS	-	-	9-11-9-27	1.65V	•	•
Vendor	PartNum.	Size	SS/DS	Chip Brand	Chip NO.	Timing - Dimm	Vol.		

4 DIMM Slots

- **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.