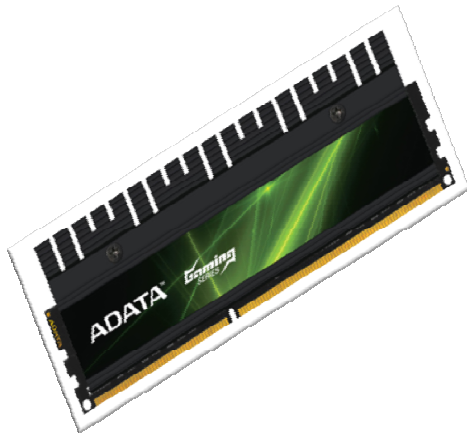




**XPG Gaming v2.0 Series DDR3 2400G
Product Reviewer's Guide**

July 2012

Contents



Introduction	1
Product Background	2
Product Positioning	2
Product Highlights	2
Specifications	3
Points of Interests	3
Benchmark Tools	4
Contact Information	6

Introduction

This Performance guide contains information on the new XPG™ (Xtreme Performance Gear) Gaming V2.0 DDR3 2400G, including product features and descriptions, and benchmark results.

The ADATA logo and usage guidelines are available at

http://www.adata.com.tw/index.php?action=bs_main&page=bs_content_logo&lan=en.

Product pictures can be downloaded from ADATA website at

http://www.adata-group.com/index.php?action=bs_main&page=bs_content_product_packages&ProductID=90&flag=

Please refer to this guide prior to and during testing, and feel free to use this content when composing review articles.

If you encounter any problems during the testing process, or if you have questions

regarding the test results, please contact us via email using the contact information found at the end of the guide.

Product Background

XPG DRAM modules signify Xtreme Performance Gear, providing the extreme speed and performance required by advanced users. The XPG Gaming series v2.0 is targeted specifically at the distinct performance and cooling needs of the worldwide gaming community.

Product Positioning

Designed specifically for computer game players, the XPG Gaming series can satisfy the gamers' needs for daily gaming and computing with outstanding reliability and performance. With TCT, the extended heat sink and 2oz double-copper PCB2 (Printed Circuit Board), the new XPG Gaming v2.0 Series is released with remarkable performance and enhanced reliability.

The newly introduced ADATA XPG Gaming v2.0 Series adopts TCT (Thermal Conductive Technology), retaining operational stability while offering higher performance. While designed with computer gamers in mind, the XPG Gaming v2.0 Series is suitable for all users, delivering stability and compatibility, freeing up your computer's power for successful navigation of the PC gaming world.

Product Highlights

XPG Gaming v2.0 DDR3 2400G:

- **Faster performance with speed up to 2400MHz** and 1.65 volts, transfer bandwidth can reach 19,200 MB/s (PC3 19200)
- Designed for 3rd generation Intel core processors and Z77 platform
- Supports XMP ver. 1.3 (Extreme Memory Profile)
- Lead-free products are RoHS compliant
- Thermal Conductive Technology (TCT)
- 2oz Copper 8-layer PCB
- Dual channel

Specifications

Specification	XPG Gaming V 2.0 2400G
Performance	speed up to 2400MHz and 1.65 volts, transfer bandwidth can reach 19,200 MB/s (PC3 19200)
Timing reference	DDR3 1333 CL9-9-9-24 at 1.5V DDR3 2400 CL10-12-12-31 at 1.65V (XMP Profile 1)
Density	8GB (4GB x 2)
Compatibility	DDR3 1333 CL9-9-9-24 at 1.5V
Operating voltage	1.65 V
Dimensions (L x W x H)	133 x 49 x 8.5mm
Weight	160g
Warranty	Limited lifetime warranty

Points of Interests

To test the real world data transfer performance, three benchmark programs: (1) AIDA64 Edition, (2) CPU-Z1.61.1 x64, and (3)MaxxMEM2 v1.91 are investigated in this reviewer's guide. The benchmarking performance is based on the following hardware devices and platform. Actual performance may vary depending on hardware and software testing environment.

Sample configuration	ADATA XPG Gaming v2.0 DDR3-2400
Motherboard	Asus Maximus V Gene
Motherboard Chipset	Intel Z77 Ext.
Computer	ACPI x64-based PC
Operation System	Microsoft Windows 7 Ultimate
VGA	NVIDIA GeForce GTX 550 Ti Video Adapter
Multimedia	Realtek ALC899 Audio Adapter
Storage	Asmedia 106x SATA Controller Intel(R) 7 Series/C216 Chipset WDC WD1600AAJS-00L7A0 A Disk Drive

Benchmark Tools

1. AIDA64 v 2.50.2000

Sample	AIDA64 v2.50.2000 Performance (MB/s)		
DDR3-2400	Read Speed	Write Speed	Copy Speed
	24535	23523	27878

AIDA64 Extreme Edition 2.50.2000-memory read

Menu	Favorites	CPU	CPU Clock	Motherboard	Chipset	Memory	CL-RCD-RP-RAS	Read Speed
AIDA64 v2.50.2000		24535 MB/s	Core i7-3770K	4500 MHz	Asus Maximus V Gene	Z77 Ext.	Dual DDR3-2400 10-12-12-31 CR2	24535 MB/s
Computer		16788 MB/s	Core i7-3960X Extreme	3300 MHz	Intel DX79SI	X79	Quad DDR3-1600 9-9-9-24 CR2	16788 MB/s
Motherboard		16252 MB/s	Core i7-2600	3400 MHz	Asus P8P67	P67	Dual DDR3-1333 9-9-9-24 CR1	16252 MB/s
Operating System		14202 MB/s	FX-6100	3300 MHz	Asus Sabertooth 990FX	AMD990FX	Dual DDR3-1866 9-9-9-24 CR1	14202 MB/s
Server		14174 MB/s	Core i7-990X Extreme	3466 MHz	Intel DX58SO2	X58	Triple DDR3-1333 9-9-9-24 CR1	14174 MB/s
Display		13899 MB/s	Core i7-965 Extreme	3200 MHz	Asus P6T Deluxe	X58	Triple DDR3-1333 9-9-9-24 CR1	13899 MB/s
Multimedia		12400 MB/s	Xeon X5550	2666 MHz	Supermicro X8DTN+	i5520	Triple DDR3-1333 9-9-9-24 CR1	12400 MB/s
Storage		11481 MB/s	Xeon X3430	2400 MHz	Supermicro X8SIL-F	i3420	Dual DDR3-1333 9-9-9-24 CR1	11481 MB/s
Network		9117 MB/s	Core i5-650	3200 MHz	Supermicro C7SIM-Q	Q57 Int.	Dual DDR3-1333 9-9-9-24 CR1	9117 MB/s
DirectX		9084 MB/s	Sempron 140	2700 MHz	Asus Sabertooth 990FX	AMD990FX	Unganged Dual D...	9084 MB/s
Devices		8862 MB/s	Athlon64 X2 Black 64...	3200 MHz	MSI K9N SLI Platinum	nForce570SLI	Dual DDR2-800 4-4-4-11 CR1	8862 MB/s
Software		7990 MB/s	Pentium EE 955	3466 MHz	Intel D955XBK	i955X	Dual DDR2-667 4-4-4-11	7990 MB/s
Security		7980 MB/s	A8-3850	2900 MHz	Gigabyte GA-A75M-UD2H	A75 Int.	Dual DDR3-1333 9-9-9-24 CR1	7980 MB/s
Config		7891 MB/s	Phenom II X6 1055T	2800 MHz	Gigabyte GA-790FXTA-UD5	AMD790FX	Unganged Dual D...	7891 MB/s
Database		7870 MB/s	P4EE	3733 MHz	Intel SE7230NHLLX	iE7230	Dual DDR2-667 5-5-5-15	7870 MB/s
Benchmark		7437 MB/s	Phenom II X4 Black 9...	3000 MHz	Asus M3N78-EM	GeForce8300 Int.	Ganged Dual DDR...	7437 MB/s
Memory Read		7134 MB/s	Core 2 Extreme QX96...	3000 MHz	Gigabyte GA-EP35C-DS3R	P35	Dual DDR3-1066 8-8-8-20 CR2	7134 MB/s
Memory Write		7002 MB/s	Core 2 Extreme X8800	2933 MHz	Abit AB9	P965	Dual DDR2-800 5-5-5-18 CR2	7002 MB/s
Memory Copy		6886 MB/s	Core 2 Extreme QX67...	2666 MHz	Intel D975XBK2	i75X	Dual DDR2-667 5-5-5-15	6886 MB/s
Memory Latency		6347 MB/s	Athlon64 X2 4000+	2100 MHz	ASRock AliveNF7G-HDrea...	nForce7050-63...	Dual DDR2-700 5-5-5-18 CR2	6347 MB/s
CPU Queen		6181 MB/s	Pentium D 820	2800 MHz	Abit Fatal1ty F-80HD	R5600 Int.	Dual DDR2-800 5-5-5-18 CR2	6181 MB/s
CPU PhotoWorx		5934 MB/s	Athlon64 3200+	2000 MHz	ASRock 939S56-M	S15756	Dual DDR400 2.5-3-3-8 CR2	5934 MB/s
CPU Zlib		5646 MB/s	Core 2 Duo P8400	2266 MHz	MSI MegaBook PR201	GM45 Int.	Dual DDR2-667 5-5-5-15	5646 MB/s
CPU AES		5375 MB/s	Celeron 420	1600 MHz	Intel DQ965CO	Q965 Int.	Dual DDR2-667 5-5-5-15	5375 MB/s
CPU Hash		5276 MB/s	Opteron 2210 HE	1800 MHz	Tyan Thunder h2000M	BCM5785	Dual DDR2-600R 5-5-5-15 CR1	5276 MB/s
CPU VP8		5141 MB/s	Atom D2500	1866 MHz	Intel D2500CC	NM10 Int.	DDR3-1066 SDRAM 7-7-7-20	5141 MB/s
CPU Julia		4920 MB/s	Opteron 2378	2400 MHz	Tyan Thunder n3600R	nForcePro-3600	Unganged Dual D...	4920 MB/s
CPU Mandel		4852 MB/s	Opteron 2431	2400 MHz	Supermicro H8DB+-F	SR5690	Unganged Dual D...	4852 MB/s
CPU SinJulia		4569 MB/s	Xeon	3400 MHz	Intel SE7320SP2	iE7320	Dual DDR333R 2.5-3-3-7	4569 MB/s
		4353 MB/s	Opteron 240	1400 MHz	MSI K8D Master3-133 FS	AMD8100	Dual DDR400R 3-4-4-8 CR1	4353 MB/s
		4158 MB/s	Phenom X4 9500	2200 MHz	Asus M3A	AMD770	Ganged Dual DDR...	4158 MB/s

AIDA64 Extreme Edition 2.50.2000-memory write

Menu	Favorites	CPU	CPU Clock	Motherboard	Chipset	Memory	CL-RCD-RP-RAS	Write Speed
AIDA64 v2.50.2000		23532 MB/s	Core i7-3770K	4500 MHz	Asus Maximus V Gene	Z77 Ext.	Dual DDR3-2400 10-12-12-31 CR2	23532 MB/s
Computer		18438 MB/s	Core i7-2600	3400 MHz	Asus P8P67	P67	Dual DDR3-1333 9-9-9-24 CR1	18438 MB/s
Motherboard		15095 MB/s	Core i7-3960X Extreme	3300 MHz	Intel DX79SI	X79	Quad DDR3-1600 9-9-9-24 CR2	15095 MB/s
Operating System		12544 MB/s	Core i7-990X Extreme	3466 MHz	Intel DX58SO2	X58	Triple DDR3-1333 9-9-9-24 CR1	12544 MB/s
Server		12064 MB/s	Core i7-965 Extreme	3200 MHz	Asus P6T Deluxe	X58	Triple DDR3-1333 9-9-9-24 CR1	12064 MB/s
Display		9928 MB/s	FX-6100	3300 MHz	Asus Sabertooth 990FX	AMD990FX	Dual DDR3-1866 9-9-9-24 CR1	9928 MB/s
Multimedia		9555 MB/s	Core i5-650	3200 MHz	Supermicro C7SIM-Q	Q57 Int.	Dual DDR3-1333 9-9-9-24 CR1	9555 MB/s
Storage		9417 MB/s	Xeon X3430	2400 MHz	Supermicro X8SIL-F	i3420	Dual DDR3-1333 9-9-9-24 CR1	9417 MB/s
Network		8836 MB/s	Athlon64 X2 Black 64...	3200 MHz	MSI K9N SLI Platinum	nForce570SLI	Dual DDR2-800 4-4-4-11 CR1	8836 MB/s
DirectX		8363 MB/s	Sempron 140	2700 MHz	Asus Sabertooth 990FX	AMD990FX	Unganged Dual D...	8363 MB/s
Devices		7506 MB/s	Core 2 Extreme QX96...	3000 MHz	Gigabyte GA-EP35C-DS3R	P35	Dual DDR3-1066 8-8-8-20 CR2	7506 MB/s
Software		7052 MB/s	Phenom II X6 1055T	2800 MHz	Gigabyte GA-790FXTA-UD5	AMD790FX	Unganged Dual D...	7052 MB/s
Security		6895 MB/s	Phenom II X6 1055T	2800 MHz	Intel S5400SF	i5400	Quad DDR2-640FB 5-5-5-15	6895 MB/s
Config		6711 MB/s	Xeon ES462	2900 MHz	Gigabyte GA-A75M-UD2H	A75 Int.	Dual DDR3-1333 9-9-9-24 CR1	6711 MB/s
Database		6387 MB/s	A8-3850	2900 MHz	Intel D975XBK2	i75X	Dual DDR2-667 5-5-5-15	6387 MB/s
Benchmark		6341 MB/s	Xeon X5550	2666 MHz	Supermicro X8DTN+	i5520	Triple DDR3-1333 9-9-9-24 CR1	6341 MB/s
Memory Read		5828 MB/s	Phenom II X4 Black 9...	3000 MHz	Asus M3N78-EM	GeForce8300 Int.	Ganged Dual DDR...	5828 MB/s
Memory Write		5711 MB/s	Athlon64 X2 4000+	2100 MHz	ASRock AliveNF7G-HDrea...	nForce7050-63...	Dual DDR2-700 5-5-5-18 CR2	5711 MB/s
Memory Copy		5608 MB/s	Pentium EE 955	3466 MHz	Intel D955XBK	i955X	Dual DDR2-667 4-4-4-11	5608 MB/s
Memory Latency		5592 MB/s	P4EE	3733 MHz	Intel SE7230NHLLX	iE7230	Dual DDR2-667 5-5-5-15	5592 MB/s
CPU Queen		5362 MB/s	Core 2 Duo P8400	2266 MHz	MSI MegaBook PR201	GM45 Int.	Dual DDR2-667 5-5-5-15	5362 MB/s
CPU PhotoWorx		4853 MB/s	Core 2 Extreme X6800	2933 MHz	Abit AB9	P965	Dual DDR2-800 5-5-5-18 CR2	4853 MB/s
CPU Zlib		4838 MB/s	Core 2 Extreme QX67...	2666 MHz	Intel D975XBK2	i75X	Dual DDR2-667 5-5-5-15	4838 MB/s
CPU AES		4685 MB/s	Atom D2500	1866 MHz	Intel D2500CC	NM10 Int.	DDR3-1066 SDRAM 7-7-7-20	4685 MB/s
CPU Hash		4452 MB/s	Opteron 2210 HE	1800 MHz	Tyan Thunder h2000M	BCM5785	Dual DDR2-600R 5-5-5-15 CR1	4452 MB/s
CPU VP8		4232 MB/s	Pentium D 820	2800 MHz	Abit Fatal1ty F-80HD	R5600 Int.	Dual DDR2-800 5-5-5-18 CR2	4232 MB/s
CPU Julia		4177 MB/s	Xeon	3400 MHz	Intel SE7320SP2	iE7320	Dual DDR333R 2.5-3-3-7	4177 MB/s
CPU Mandel		4106 MB/s	Athlon64 3200+	2000 MHz	ASRock 939S56-M	S15756	Dual DDR400 2.5-3-3-8 CR2	4106 MB/s
CPU SinJulia		3800 MB/s	Opteron 248	2200 MHz	MSI K8T Master1-FAR	K8T800	Dual DDR266R 2-3-3-6 CR1	3800 MB/s
		3785 MB/s	Opteron 2378	2400 MHz	Tyan Thunder n3600R	nForcePro-3600	Unganged Dual D...	3785 MB/s
		3629 MB/s	Celeron 420	1600 MHz	Intel DQ965CO	Q965 Int.	Dual DDR2-667 5-5-5-15	3629 MB/s
		3581 MB/s	Opteron 2431	2400 MHz	Supermicro H8DB+-F	SR5690	Unganged Dual D...	3581 MB/s

AIDA64 Extreme Edition 2.50.2000-memory copy

FileViewReportFavoritesToolsHelp

ReportResultsDriver ScanBIOS Updates

MenuFavorites

AIDA64 v2.50.2000

Computer

Motherboard

Operating System

Server

Display

Multimedia

Storage

Network

DirectX

Devices

Software

Security

Config

Database

Benchmark

Memory Read

Memory Copy

Memory Latency

CPU Queen

CPU PhotoWorx

CPU ZLib

CPU AES

CPU Hash

FPU V98

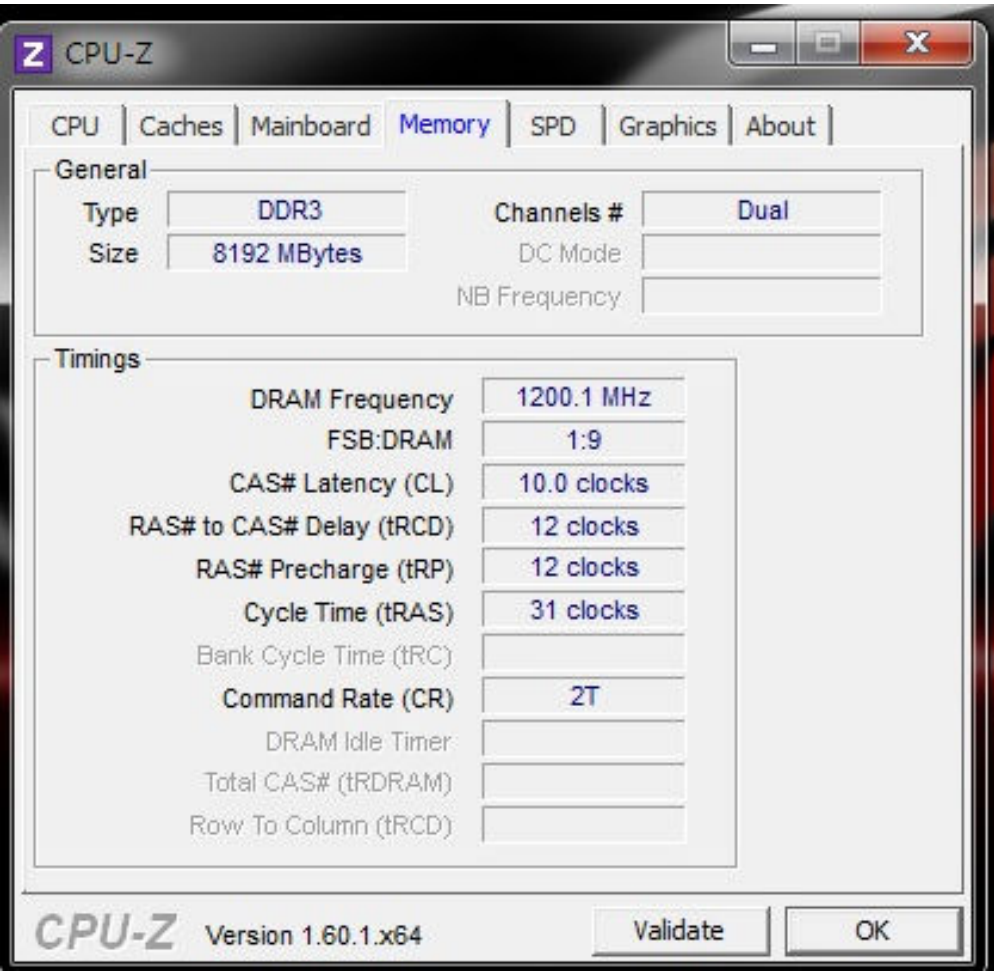
FPU Julia

FPU Mandel

FPU SinJulia

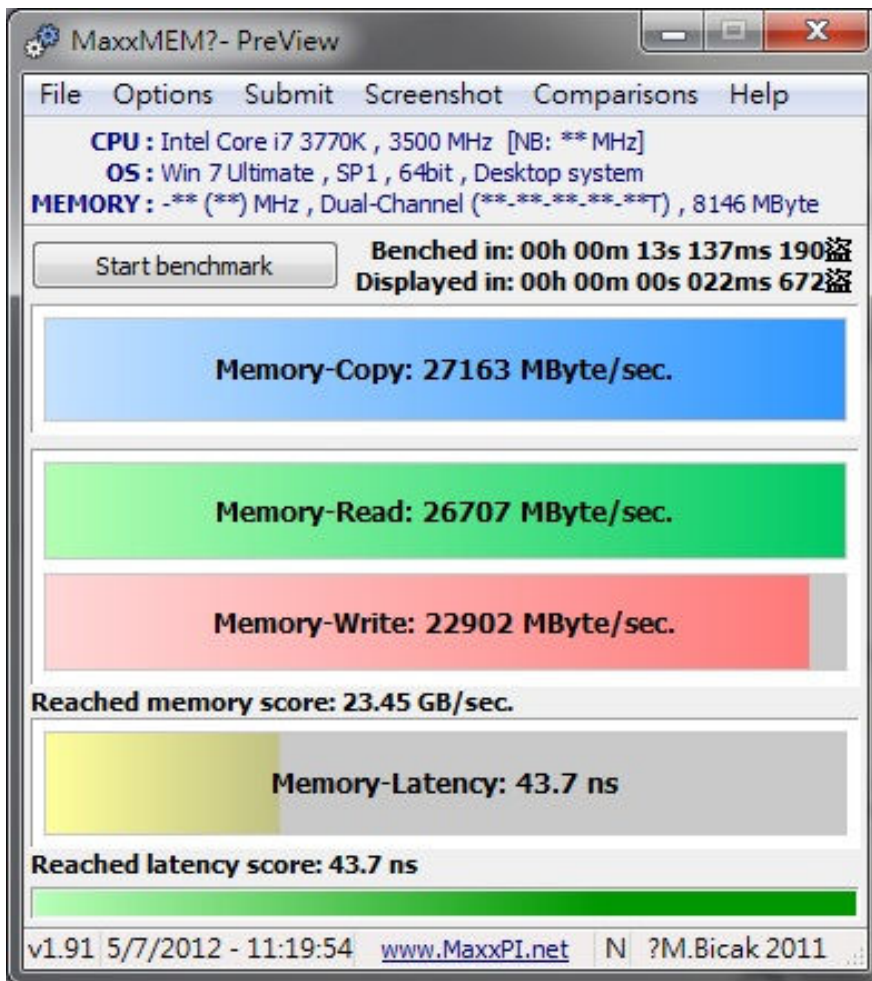
CPU	CPU Clock	Motherboard	Chipset	Memory	CL-RCD-RP-RAS	Copy Speed	
27878 MB/s	Core i7-3770K	4500 MHz	Asus Maximus V Gene	Z77 Ext.	Dual DDR3-2400	10-12-12-31 CR2	27878 MB/s
17951 MB/s	FX-6100	3300 MHz	Asus Sabertooth 990FX	AMD990FX	Dual DDR3-1866	9-9-9-24 CR1	17951 MB/s
16382 MB/s	Core i7-2600	3400 MHz	Asus P8P67	P67	Dual DDR3-1333	9-9-9-24 CR1	16382 MB/s
15998 MB/s	Core i7-3960X Extreme	3300 MHz	Intel DX79SI	X79	Quad DDR3-1600	9-9-9-24 CR2	15998 MB/s
14937 MB/s	Core i7-965 Extreme	3200 MHz	Asus P6T Deluxe	X58	Triple DDR3-1333	9-9-9-24 CR1	14937 MB/s
12610 MB/s	Core i7-990X Extreme	3466 MHz	Intel DX58SO2	X58	Triple DDR3-1333	9-9-9-24 CR1	12610 MB/s
11211 MB/s	Xeon X3430	2400 MHz	Supermicro XBSL-F	i3420	Dual DDR3-1333	9-9-9-24 CR1	11211 MB/s
10807 MB/s	Phenom II X6 1055T	2800 MHz	Gigabyte GA-790FXA-UD5	AMD790FX	Unganged Dual D...	9-9-9-24 CR1	10807 MB/s
10641 MB/s	A8-3850	2900 MHz	Gigabyte GA-A75M-UD2H	A75 Int.	Dual DDR3-1333	9-9-9-24 CR1	10641 MB/s
10557 MB/s	Sempron 140	2700 MHz	Asus Sabertooth 990FX	AMD990FX	Unganged Dual D...	9-9-9-24 CR1	10557 MB/s
9534 MB/s	Core i5-650	3200 MHz	Supermicro C7SIM-Q	Q57 Int.	Dual DDR3-1333	9-9-9-24 CR1	9534 MB/s
9391 MB/s	Xeon X5550	2666 MHz	Supermicro XBDTN+	i5520	Triple DDR3-1333	9-9-9-24 CR1	9391 MB/s
8321 MB/s	Phenom II X4 Black 9...	3000 MHz	Asus M3N78-EM	GeForce8300 Int.	Ganged Dual DDR...	5-5-5-18 CR2	8321 MB/s
7094 MB/s	Athlon64 X2 Black 64...	3200 MHz	MSI K9N SLI Platinum	nForce570SLI	Dual DDR2-800	4-4-4-11 CR1	7094 MB/s
6770 MB/s	Opteron 2378	2400 MHz	Tyan Thunder n3600R	nForcePro-3600	Unganged Dual D...	6-6-6-18 CR1	6770 MB/s
6663 MB/s	Opteron 2431	2400 MHz	Supermicro H8DB+-F	SR5690	Unganged Dual D...	6-6-6-18 CR1	6663 MB/s
6458 MB/s	Athlon64 X2 4000+	2100 MHz	ASRock ALiveNF7G-HDrea...	nForce7050-63...	Dual DDR2-700	5-5-5-18 CR2	6458 MB/s
6200 MB/s	Core 2 Extreme Q/96...	3000 MHz	Gigabyte GA-EP35C-D53R	P35	Dual DDR3-1066	8-8-8-20 CR2	6200 MB/s
6040 MB/s	Pentium EE 955	3466 MHz	Intel D955XBK	i955X	Dual DDR2-667	4-4-4-11	6040 MB/s
5951 MB/s	P4EE	3733 MHz	Intel SE7230NHLX	iE7230	Dual DDR2-667	5-5-5-15	5951 MB/s
5426 MB/s	Core 2 Extreme X6800	2933 MHz	Abit AB9	P965	Dual DDR2-800	5-5-5-18 CR2	5426 MB/s
5421 MB/s	Xeon E5462	2800 MHz	Intel SS400SF	i5400	Quad DDR2-640FB	5-5-5-15	5421 MB/s
4988 MB/s	Core 2 Duo P8400	2386 MHz	MSI MegaBook PR201	GM45 Int.	Dual DDR2-667	5-5-5-15	4988 MB/s
4764 MB/s	Pentium D 820	2800 MHz	Abit Fatal1ty F-390HD	RS600 Int.	Dual DDR2-800	5-5-5-18 CR2	4764 MB/s
4615 MB/s	Athlon64 3200+	2000 MHz	ASRock 939S56-M	SIS756	Dual DDR400	2-5-3-3-8 CR2	4615 MB/s
4585 MB/s	Core 2 Extreme Q/67...	2666 MHz	Intel D975XBX2	i975X	Dual DDR2-667	5-5-5-15	4585 MB/s
4283 MB/s	Phenom X4 9500	2200 MHz	Asus M5A	AMD770	Ganged Dual DDR...	5-5-5-18 CR2	4283 MB/s
4223 MB/s	Celeron 420	1600 MHz	Intel DQ965CO	Q965 Int.	Dual DDR2-667	5-5-5-15	4223 MB/s
4052 MB/s	Xeon	3400 MHz	Intel SE7320SP2	iE7320	Dual DDR333R	2-5-3-3-7	4052 MB/s
3890 MB/s	Opteron 2210 HE	1800 MHz	Tyan Thunder h2000M	BCM5785	Dual DDR2-600R	5-5-5-15 CR1	3890 MB/s
3668 MB/s	Opteron 248	2200 MHz	MSI K8T Master1-FAR	K8T800	Dual DDR266R	2-3-3-6 CR1	3668 MB/s

2, CPU-Z 1.61.1.x64



General	
Type	DDR3
Size	8192 MBytes
Channels #	Dual
DC Mode	
NB Frequency	
Timings	
DRAM Frequency	1200.1 MHz
FSB:DRAM	1:9
CAS# Latency (CL)	10.0 clocks
RAS# to CAS# Delay (tRCD)	12 clocks
RAS# Precharge (tRP)	12 clocks
Cycle Time (tRAS)	31 clocks
Bank Cycle Time (tRC)	
Command Rate (CR)	2T
DRAM Idle Timer	
Total CAS# (tRDRAM)	
Row To Column (tRCD)	

3. MaxxMEM2 v1.91



Contact Information

If you have additional questions that are not answered by this guide, or if you experience technical difficulties with your ADATA product, please contact:

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