



# XPG Z1 Gold Edition Reviewer's Guide

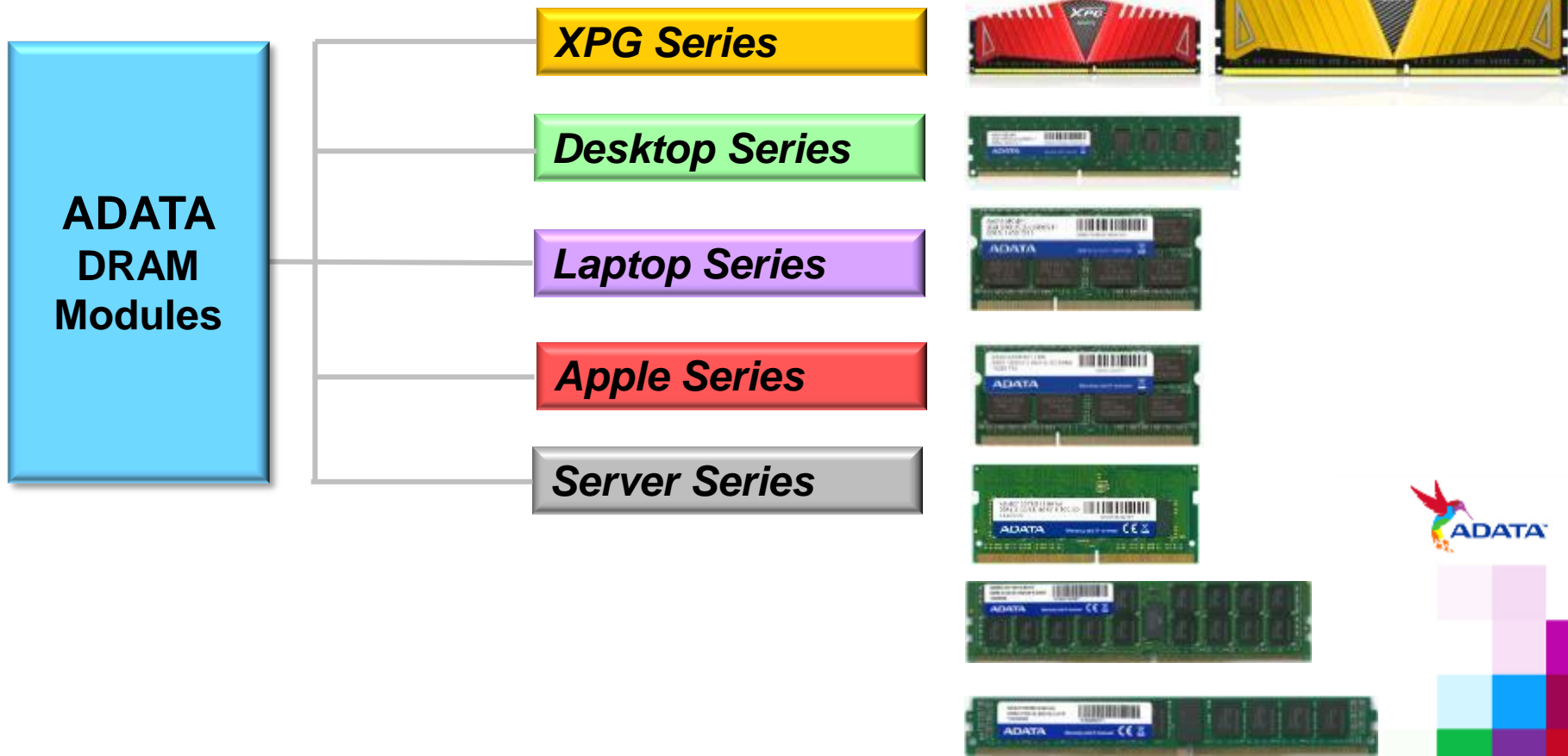
Product Marketing Dept.  
2014/12

# Specifications

Model Name	XPG Z1 Gold Edition
Frequency Speed	DDR4 3000 / 3200 / 3300 / 3333MHz (3300 and 3333MHz will be announced by January, 2015)
Module Size	4GB – 32GB *4GB: 8GB kit (4GB x 2), 16GB (4GB x 4) *8GB: 16GB kit (8GB x 2), 32GB kit (8GB x 4)
Compatibility	DDR4 2133 CL 15-15-15 at 1.2V
Operating Temperature	0°C to 85°C
Storage Temperature	-55°C to 100°C
Operating Voltage	1.35V
Dimensions (L x W x H)	133.2 x 42.65 x 7.5mm
Warranty	Limited Lifetime Warranty
Features	*Designed for Intel® Core i7 Haswell-E HEDT (high-end desktop) processor and the X99 platform  *Supports Intel XMP 2.0 (Extreme Memory Profile)  *Lead-free products are RoHS compliant  *2oz copper 10-layer PCB (Printed Circuit Board)

# Positioning

The **XPG Z1 Gold Edition** belongs to the most high-end level in ADATA's DRAM Module series. It's especially designed for overclockers, gamers, and PC enthusiasts, which only requires 1.35V to achieve high clock frequency of 3333MHz for excellent performance and power efficiency.



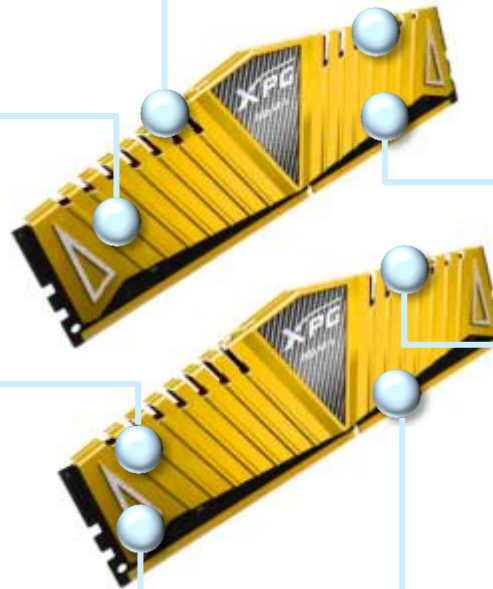
# Features

**Superior Power Efficiency:** a **10%** reduction of power (operating voltage decreases from 1.5V to **1.35V**)

**Thermal Conductive Technology (TCT)** for great heat dissipation

**Supports Intel® XMP 2.0** (Extreme Memory Profile)

**Supports Intel® Core i7 Haswell-E HEDT** (high-end desktop) processor and the **X99** platform



**High speed up to 3333MHz** (3000 / 3200 / 3300 / 3333MHz)

Transfer bandwidth up to **26.6GB/s**

**Superior stability and cooling performance:** High-quality **10-layer** black PCB with 2oz of copper

RoHS compliant



# Benchmark

## Points of Interests

To test the real world data transfer performance, 2 benchmark program:

(1) **AIDA64 v5.00.3300**

(2) **CPU-Z 1.71.1.x64**

The benchmarking performance is based on the following hardware device and platform.  
Actual performance may vary depending on hardware and software testing environment.

<b>Sample configuration</b>	<b>ADATA XPGZ1 DDR4-3333</b>
<b>Motherboard</b>	ASUS Rampage V Extreme
<b>Motherboard Chipset</b>	Intel Wellsburg X99, Intel Haswell- E
<b>Computer</b>	ACPI x64-based PC
<b>Operation System</b>	Microsoft Windows 7 Ultimate
<b>VGA</b>	NVIDIA GeForce GTX 550 Ti Video Adapter
<b>Multimedia</b>	Realtek ALC899 Audio Adapter
<b>Storage</b>	Intel(R) 9 Series/C610 Chipset WDC WD1600AAJS-00L7A0 A Disk Drive



# XPG Z1 Benchmark (AIDA64 v 5.00.3300)

- AIDA64 v 5.00.3300

AIDA64 Extreme Edition 5.00.3300 -memory read

AIDA64 Extreme Edition 5.00.3300 -memory write

AIDA64 Extreme Edition 5.00.3300 -memory copy

Sample	AIDA64 5.00.3300 Performance (MB/s)		
	Read Speed	Write Speed	Copy Speed
DDR4-3333	66880	66440	75791

**AIDA64 Cache & Memory Benchmark**

	Read	Write	Copy	Latency
Memory	66880 MB/s	66440 MB/s	75791 MB/s	52.5 ns
L1 Cache	1640.3 GB/s	820.47 GB/s	1639.8 GB/s	0.9 ns
L2 Cache	485.38 GB/s	260.15 GB/s	373.57 GB/s	2.8 ns
L3 Cache	256.16 GB/s	178.06 GB/s	227.67 GB/s	11.9 ns
L4 Cache				

CPU Type: HexaCore Intel Core i7-5930K (Haswell-E, LGA2011-v3)  
CPU Stepping: R2  
CPU Clock: 4377.3 MHz (original: 3500 MHz, overclock: 25%)  
CPU FSB: 104.2 MHz (original: 100 MHz, overclock: 4%)  
CPU Multiplier: 42x North Bridge Clock: 4168.9 MHz

Memory Bus: 1667.6 MHz DRAM:FSB Ratio: 48:3  
Memory Type: Quad Channel DDR4-3335 SDRAM [16-16-16-36 CR2]  
Chipset: Intel Wellsburg X99, Intel Haswell-E  
Motherboard: Asus Rampage V Extreme

AIDA64 v5.00.3300 / BenchDLL 4.1.627-x64 (c) 1995-2014 FinalWire Ltd.

Buttons: Save, Start Benchmark, Close



# XPG Z1 Benchmark (CPU-Z 1.71.1.x64)

CPU-Z Ver. 1.71.1.x64

CPU | Caches | Mainboard | Memory | SPD | Graphics | About |

Processor

Name: Intel Core i7 5930K

Code Name: Haswell-E/EP Max TDP: 140.0 W

Package: Socket 2011 LGA

Technology: 22 nm Core Voltage: 1.314 V

Specification: Intel(R) Core(TM) i7-5930K CPU @ 3.50GHz

Family: 6 Model: F Stepping: 2

Ext. Family: 6 Ext. Model: 3F Revision: M0

Instructions: MMX, SSE, SSE2, SSE3, SSSE3, SSE4.1, SSE4.2, EM64T, VT-x, AES, AVX, AVX2, FMA3

Clocks (Core #0)

Core Speed: 4376.42 MHz

Multiplier: x 42.0 ( 12 - 36 )

Bus Speed: 104.20 MHz

Rated FSB:

Cache

L1 Data: 6 x 32 KBytes 8-way

L1 Inst: 6 x 32 KBytes 8-way

Level 2: 6 x 256 KBytes 8-way

Level 3: 15 MBytes 20-way

Selection: Processor #1 Cores: 6 Threads: 12

CPU-Z Ver. 1.71.1.x64 Tools Validate OK

CPU-Z Ver. 1.71.1.x64

CPU | Caches | Mainboard | Memory | SPD | Graphics | About |

Motherboard

Manufacturer: ASUSTeK COMPUTER INC.

Model: RAMPAGE V EXTREME Rev: 1.xx

Chipset: Intel Haswell-E Rev: 02

Southbridge: Intel X99 Rev: 05

LPCID: Nuvoton NCT6791

BIOS

Brand: American Megatrends Inc.

Version: 0802

Date: 10/16/2014

Graphic interface

Version: PCI-Express

Link Width: x16 Max. Supported: x16

Side Band:

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CPU-Z Ver. 1.71.1.x64

CPU | Caches | Mainboard | Memory | SPD | Graphics | About |

General

Type: DDR4 Channel #:

Size: 32 GBytes DC Mode:

NB Frequency: 4168.0 MHz

Timings

DRAM Frequency: 1667.3 MHz

FSB:DRAM: 1:24

CAS# Latency (CL): 16.0 clocks

RAS# to CAS# Delay (tRCD): 16 clocks

RAS# Precharge (tRP): 16 clocks

Cycle Time (tRAS): 36 clocks

Row Refresh Cycle Time (tRFC): 450 clocks

Command Rate (CR): 2T

DRAM Idle Timer:

Total CAS# (tRDRAM):

Row To Column (tRCD):

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CPU-Z Ver. 1.71.1.x64

CPU | Caches | Mainboard | Memory | SPD | Graphics | About |

Memory Slot Selection

Slot #1: DDR4

Module Size: 4096 MBytes Correction:

Max Bandwidth: DDR4-2135 (1067 MHz) Registered:

Manufacturer: A-Data Technology Buffered:

Part Number: DDR4 3333 20Z SPD Ext.: XMP 2.0

Serial Number: 17000000 Week/Year: 48 / 14

Timings Table

	JEDEC #6	JEDEC #7	XMP-3332	XMP-0
Frequency	1067 MHz	1067 MHz	1666 MHz	47483648 M
CAS# Latency	15.0	16.0	16.0	2147483648.
RAS# to CAS#	15	15	16	0
RAS# Precharge	15	15	16	0
tRAS	36	36	36	0
tRC	50	50	52	0
Command Rate				
Voltage	1.20 V	1.20 V	1.350 V	0.000 V

CPU-Z Ver. 1.71.1.x64 Tools Validate OK



THANK YOU

