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24 Intel Z87 Chipset » As we reach just about four weeks since the launch of Intel's latest platform, and I pass into my seventh week of testing with Haswell, I have constantly found myself in shock at what the platform offers and how enthusiasts react to it. Many enthusiasts seem happy, but there are still those that don't see much value in the upgrade. One of the biggest benefits of this platform is to me purely based on the features that are packed into all the supporting motherboards, as many of these break traditional molds with their designs, having clear and concise design ideals that cater towards specific users. Gone is the ability to get decent overclocks with high-end boards only because the sub-$200 market is now full of OC-oriented products. Onboard audio has also seen some fantastic attention with quite a few products boasting superb audio capabilities and customization. But what about the normal user who has no need for all the frills and gimmicks? Enter the MSI Z87-G45 GAMING. I started my Haswell board reviews off with the MSI Z87-GD65 GAMING, a board I affectionately refer to as the Dragon. I had the opportunity to speak to MSI long before the launch of the Z87-GD65, and many of the concerns I raised were addressed with the Z87-GD65 GAMING, which was very nice to see. I wasn't the only one who noticed that MSI really took the time to develop a great product, as the same board won an award from Computex for it's innovation and style. Like it's "bigger" brother, the MSI Z87-G45 GAMING carries a lot of the same features, but the focus on overclocking-specific features is gone while the GAMING style remains. Does the removal of these features make the MSI Z87-G45 GAMING a lesser board? Let's take a look and find out. SpecificationsSpecificationsCPU SUPPORT:4th Gen Intel Core i7/i5/i3/Pentium/Celeron processor family for the LGA 1150 SocketPOWER DESIGN:CPU Power: 8 Phases PCH Power: 1 Phase Memory Power: 2 Phases CHIPSET:Intel Z87 Express INTEGRATED GRAPHICS:Dependant on installed CPUMEMORY:4 x DIMM, Max. 64 GB, DDR3 1066 to DDR3 3000+(OC) BIOS:AMI EFI BIOS with 64 Mb Flash ROMSLOTS:3 x PCI Express 3.0 x16 slots (x16 or x8/x8 or x8/x4/x4) 4 x PCI Express 2.0 x1 slotHDD CONNECTIVITY:6 x SATA 6.0 Gb/s (Intel Z87) 1 x mSATA slot (disables Intel SATA Port 5) NETWORKING:1 x Killer E2205 Gigabit LAN PORTS:6 x USB 3.0 ports (2 at front panel, 4 at rear panel) 8 x USB 2.0 ports (6 at front panel, 2 at rear panel) 1 x RJ45 LAN connectors 1 x Audio block with 6 OFC audio jacks 1 x Optical Digital Audio port 1 x Coaxial Digital Audio port 1 x PS/2 Keyboard/Mouse port 1 x HDMI port 1 x DVI-D port 1 x VGA port 1 x ClearCMOS buttonAUDIO:Realtek ALC1150 HD CODECFAN HEADERS:5 x 4-pin PWMFORM FACTOR:ATX Form Factor (305 mm x 244 mm)EXCLUSIVE FEATURES:Audio BoostKiller EthernetMilitary Class4OC Genie4Click BIOS4SoundBlaster CinemaV-Check PointsClear CMOS ButtonTotal Fan ControlLucid Virtu MVP 2.0Gaming Device PortSuper RAIDCommand Center Next Page »Intel Z87 Chipset Page: 1- Introduction 2- Intel Z87 Chipset 3- Packaging 4- The Board - Layout 5- The Board - A Closer Look 6- Installation & Performance 7- BIOS Walkthrough 8- Board Software 9- CPU Performance Results 10- 3D Performance Results 11- Drive & Audio Performance Results 12- Overclocking - The Hardware 13- Overclocking Performance Summary 14- Value & Conclusion 15- (Discussion: 24 Comments) View as single page Mar 27th, 2022 12:06 EEST NVIDIA GeForce 512.15 WHQL AMD Radeon 22.3.2 Beta Intel 30.0.101.1631 Feb 25th, 2022 Elden Ring Benchmark Test & Performance Analysis Review Mar 17th, 2022 AMD Radeon Super Resolution RSR Quality & Performance Review Mar 2nd, 2022 Cooler Master HAF 500 Case Review Mar 11th, 2022 WD Black SN770 1 TB Review - What Magic is This? Mar 3rd, 2022 NVIDIA RTX A2000 Review - World's Fastest ITX Card: Low-Profile and Slot-Powered Mar 11th, 2022 Seasonic Focus SPX Series 750 W SFX PSU Review Mar 22nd, 2022 InWin N515 Case Review Feb 24th, 2022 Upcoming Hardware Launches 2022 (Updated Feb 2022) Mar 25th, 2022 Sabrent Rocket 4 Plus 4 TB SSD Review Mar 9th, 2022 Glorious Model O- Wireless Gaming Mouse Review (DDR3 1066/1333/1600/1866*/2000*/2133*/2200*/2400*/2600*/2666*/2800*/3000*(*OC) MHz Gen3 (16,0,0), (8,8,0), (8,4,4) 6+Coaxial / Optical SPDIF MSI Z87-G45 GAMINGSupport HASWELL LGA 1150Chipset Intel® Z87 Express ChipsetDDR3 Memory Dual Channel DDR3 1066/1333/1600/1866*/2000*/2133*/2200*/2400*/2600*/2666*/2800*/3000*(*OC) MHzDIMM Slots 4 - Max Memory 32 GBPCI-Ex16 3 Gen3 (16,0,0), (8,8,0), (8,4,4)PCI-Ex1 4mSATA 1 - SATAIII 6 - RAID0/1/5/10LAN 10/100/1000 * 1 - TPM (header)1USB 3.0 ports (Rear) 4USB 2.0 ports (Rear) 2Audio ports (Rear)6+Coaxial / Optical SPDIFVGA 1 - HDMI 1 - DVI 1 VGA Max Share Memory (MB) 1760DirectX11Form FactorATXSupport SLI - CrossFire Processor manufacturer * Intel Processor socket * Intel® Celeron®, Intel® Pentium® Maximum number of SMP processors 1 Supported memory types * DDR3-SDRAM Number of memory slots * 4 Memory channels Dual-channel Supported memory clock speeds 1066,1200,1300,1333,1500,1600,1666,1800,1866,1900,2000,2100,2133,2200,2250,2400,2450,2600,2666,2800,3000 MHz Maximum internal memory * 64 GB Supported storage drive interfaces * SATA,SATA II,SATA III Parallel processing technology support * 2-Way CrossFireX,2-Way SLI,3-Way CrossFireX,LucidLogix Virtu Graphics card family Intel Graphics Card HD Graphics Maximum resolution 4096 x 2160 pixels Discrete graphics support USB 3.2 Gen 1 (3.1 Gen 1) connectors * 1 Number of SATA III connectors * 6 Front panel audio connector ATX Power connector (24-pin) Number of chassis fan connectors 4 Chassis intrusion connector EPS power connector (8-pin) USB 2.0 ports quantity * 2 USB 3.2 Gen 1 (3.1 Gen 1) Type-A ports quantity * 4 Ethernet LAN (RJ-45) ports * 1 VGA (D-Sub) ports quantity * 1 Let the Games Begin! MSI Gaming motherboards are designed to provide gamers with best-in-class features and technology. Backed by the imposing looks of MSI's Dragon, each motherboard is an engineering masterpiece tailored to Gaming perfection. The Best Gaming Weapons at Hand: Get the highest frag and the lowest lag with Killer E2200 Game Networking Crystal clear sound with Audio Boost Top quality audio solution with Sound Blaster Cinema Superb graphics with VGA Boost Blazing fast booting with Super RAID Gaming Device Port Military Class 4 Components OC Genie 4 & Click BIOS 4 Optimized for multiple graphics cards Supports DDR3-3000 memory for super fast loading Killer E2200 Game Networking Kill Your Lag! The Killer E2200 Intelligent Networking Platform is built for maximum networking performance for online games and high-quality streaming media. Featuring Advanced Stream Detect, Killer E2200 automatically detects and accelerates game traffic ahead of other network traffic for smoother, stutter-free in-game performance and the competitive edge. With this exclusive, automatic traffic prioritization, games and real-time chat get priority over low-level system chatter, giving you the lowest latency for game data on the most controllable network hardware available. Through the detection and prioritization of Gaming traffic you can finally fully utilize your network without fear of being kicked from an online game because of high ping. This enables true multi-tasking without manually enabling or disabling applications, updates and installations. Killer networking actually allows you to use your PC 24 hours a day. Top Quality Audio Solution with Sound Blaster Cinema Hear your enemies perfectly, even on an ear-drum shattering battlefield. Thanks to Sound Blaster Cinema, you're getting amazing surround sound with just stereo headphones. Your most important Gaming sound effects are reproduced - clear as crystal - allowing you to focus on your game even during extremely long Gaming sessions. Powered by the SBX Pro Studio technologies, Sound Blaster Cinema enables you to clearly hear specific sounds in Gaming environments, making your ears a decisive tool on the battlefield. MSI VGA Boost MSI VGA Boost is one of MSI's exclusive ways to help gamers to fully engage in their virtual world. VGA Boost increases the power limitations for MSI Gaming graphics cards when inserted in an MSI Gaming motherboard. It simply upgrades your Power Tuning and current limits allowing your graphics to boost to higher clock speeds when your Gaming graphics get more intense and sustain maximum performance for a longer time. This is all supported by the power design for the PCI Express slots and the build quality of MSI Graphics cards. Now, matching MSI Gaming hardware not only gives your game PC some fiery red dragon looks, your PC Gaming experience will benefit from a safe and powerful boost in graphics. Super RAID With MSI Super RAID you can combine hard drives, SSDs and mSATA into blazing fast bootable drives. Load your operating system, videos or even games faster than ever. You can now enjoy the benefits of bigger and faster storage, without all the trouble that normally surround RAID configurations. Easily Setup The Latest Technologies: Intel Smart Response Intel Rapid Start Intel Smart Connect Military Class 4 Components Military Class 4 is the next step in high quality components. The Super Ferrite Chokes and Dark CAPs will make sure that your PC runs more stably under extreme gaming conditions. Dark CAP With their aluminum core design, Dark CAP's have been a staple in high-end motherboards and provides lower Equivalent Series Resistance (ESR) as well as its over-ten-year lifespan. Super Ferrite Choke Super Ferrite Choke uses a Ferrite core that is Super-Permeable. This allows the Super Ferrite Choke to run 95°F (35°C) cooler, have a 30% higher current capacity, a 20% improvement in power efficiency, and better overclocking power stability. Military Class Essentials The core of Military Class 4 is based on the essentials which increase your stability in the toughest conditions. The humidity protection and high temperature protection ensure your system can survive any environment, no matter how harsh. The new structure of the PCB limits EMI heat radiation. On top of that the all the connectors have ESD protection in order to prevent short circuit. OC GENIE 4 OC Genie 4 supercharges your speed! When used, OC Genie 4 accelerates your entire system and puts it into overdrive! Tuned by the professional overclockers, OC Genie 4 keeps you record-breaking performance on a silver platter. Total Control MSI's exclusive Command Center software is a very powerful tool to push your motherboard to the max. With a very intuitive touch ready interface, Command Center allows users to tune settings to increase system stability, maximize overclocking performance and adjust cooling features. Graphical Fan Control & Monitoring Command Center features a total new fan control interface from which users can control all their fans' speeds on the motherboard and set profiles. Users can monitor the status of the fans in real-time as well as record fan speed, voltage, and temperature status into a log file. This feature is both convenient for pro-gamers and overclockers. Unlimited RAMdisk MSI Command Center integrates an unlimited RAMdisk with the retail value of $35. With a RAMdisk you can create a virtual drive from your system memory enabling speeds 20x faster than a modern SSD. There are options to load complete game images, and you can speed up your browser or your page file which increases your whole system's performance. Supports DDR3-3000 Memory for Super-Fast Loading Tired of everlasting loading screens? The MSI Gaming series motherboards offer support for DDR3-3000MHz memory modules. That way, you won't have to miss out on the action because your in-game levels will be loaded quick! Total Fan Control Total Fan Control gives you complete control of all your fans to enable you to find the best balance of fan performance and silence. Because you can also monitor and record all your fan information, a great pool of information is available to base the fan settings on. Dragon Heat Sink With an awesome product comes an inspiring heat sink! Styled after the iconic MSI Gaming Dragon. The heat sink is oversized to provide the best thermal transfer and heat dissipation to enable your PC to just game 24 hours per day. Package Contents What's in the box? Check it out for yourself! Besides a plethora of necessary cables and connectors you also get a cool Do-Not-Disturb door-hanger, a slick Gaming case badge, and a stylish Gaming I/O panel. Gaming Device Port You want more FPS, lower ping, but why use a pro-Gaming mouse with old-fashioned standards? MSI Gaming Device Port is optimized for high polling rate and for high polling rate (500 to 1000Hz) which lowers your mouse's response time from 8 milliseconds to 1 millisecond! This gives a much smoother mouse response in games. The additional gold plating on the ports enhances the durability drastically and ensures your PS/2 and USB ports are always working when you ship out to a LAN party. Gaming Benefits More responsive Smoother gameplay Faster reactions Technical Benefits 3x More gold than regular connectors 10x Longer lifetime when plugging and unplugging Prevents oxidation and corrosion Click BIOS 4 The MSI Click BIOS 4 is the latest UEFI BIOS with optimizations for Windows 8. Besides that, it also reacts faster, runs smoother and has better mouse support. And all this comes with advanced and cool features. Optimized for Multiple Graphics Cards MSI Gaming motherboards feature one or more PCI-Express 3.0 slots, perfectly aligned and with enough space for an optimal airflow when using multiple graphics cards. That way, you will never have to worry about overheating a PC while you are enjoying vivid graphics jumping off your monitor when running an AMD CrossFire Gaming setup. Hardware Monitor Hardware monitor allows you to take control of your system through Total Fan and check your primary system characteristics in an easy graphical interface. Board Explorer This feature shows the user a visual representation of all the connectors of the motherboard and displays which devices are connected. In case of a device having a bad connection you can easily trace it with board explorer. OC Profiles Preview With OC profiles you can rapidly switch between settings and save up to eight profiles. In the blink of an eye, you can see the differences between your current system settings and any of the stored profiles. Audio Boost Reward your ears with true quality. Get ready for ear-drum shattering sound, with MSI Audio Boost! With Audio Boost we're delivering the highest audio quality so you can enjoy crystal clear sound and music in games. Reward your ears with true quality. Because the complete audio circuitry is isolated from other features, you'll enjoy less interference and more stability. The built-in headphone amplifier allows you to use studio-grade headgear and get the most amazing sound quality out of your Gaming PC. Studio level integrated 600Ω headphone amplifier Golden audio jacks for pure audio signals EMI shielded audio codec High quality audio capacitors

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