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Intel hd graphics 620 spec sheet

Intel unveiled the Intel HD Graphics 620 with Intel's 7th generation Kaby Lake series processors in September 2016. This GPU is present on the Intel Core i3-7100U, Core i5-7200U, Core i5-7300U, Core i7-7500U and core cpu i7-7600U. You're probably here because you own a Laptop or plan to buy one with one of these Processors. So if you want to know more about the performance and benchmarks of the Intel HD 620, then you've come to the right place. We hope you're finding our content useful. We just wanted to let you know that some links on this page are Amazon Affiliate Links and we can earn a small commission when you buy something after visiting these links. To learn more, visit this page. Laptops recommended with this GPU: Acer Aspire A315-51 Dell Inspiron 15 5567 Today, I will remove all your questions about the Game Performance of the Intel HD 620 Graphics Card. First, let's discuss the difference between an integrated graphics card and a dedicated one. If you already know the difference, then you can move on to the next section. An integrated graphics card uses your PC/Laptop's system memory or RAM to work, while dedicated graphics/video memory of its own. Dedicated GPUs are generally stronger than integrated ones. However, the Dedicated Graphics Card also consumes more power and costs much more. Here is a list of pros and cons of this GPU: For gaming purposes, it is always recommended to opt for a dedicated Graphics Card. On a Laptop/Notebook, you can't add a dedicated GPU later, so you need to select a laptop wisely. An example of the Integrated Graphics Card is the Intel HD 620, while the one with a dedicated GPU is Nvidia GeForce 940MX. If you are looking for the performance of the Desktop Graphics series Kaby Lake, then check out: Intel HD Graphics 630 Full Review and Comparison. For the Celeron and Pentium G4560 Series Integrated GPU, see Intel HD Graphics 610 Review and Benchmark. And you can also check out Intel's 8th Generation UHD 620 performance here. Name Intel HD Graphics 620 Type Frequency Integrated GPU Base 300 MHz Max Frequency 1.00 GHz Processing power 384 – 403.2 GFLOPS graphics memory Up to 32 GB (Depends on system RAM) Same memory type as system memory supports 4K supported in 60Hz DirectX Version 12 Lithography 14nm FinFET OpenGL Support 4.4 Max No. Displays Supported 3 The Intel® HD Graphics 620 is an integrated Intel GPU that is manufactured using the 14nm FinFET Process. It's the GPU of actions of some of the Intel Kaby Lake series processors, such as the Intel Core i5 7200U, Intel HD 620 base frequency is 300 MHz that can go up to 1.0 GHz. It also supports 4K video playback at 60Hz. Intel has made several improvements to its integrated 7th generation GPUs, which has improved its performance to some extent. It has support for the latest version of DirectX, which is DirectX 12. So you can better performance in games that that DirectX 12. The processing power of this integrated chart is from 384 to 403.2 GFLOPS. It can support a maximum of 3 displays at a time. So if you are using a laptop, you can connect 2 external monitors to increase productivity. The rest of the specifications are mentioned in the table above. How much does Intel HD Graphics 620 Video Memory (VRAM) cost? Intel HD Graphics 620 is an integrated graphics card. Therefore, your memory is dynamic. It uses system memory that can reach 32 GB. The video memory changes dynamically according to the requirement. It uses the system RAM as video memory. You can also change the maximum video memory of the BIOS settings. Benchmark comparison Intel HD Graphics 620 In passmark's benchmarking tool, the Intel HD 620 Graphics scores 944 points. This benchmark score clearly shows that there is a huge improvement over previous generations of Intel HD Graphics. It's now even stronger than Nvidia & AMD's built-in low-end GPUs. Let's take a look at all the benchmark scores. Comparison with Intel HD Graphics 520 & 5500 The Intel HD Graphics 520 is an integrated GPU of 6th generation Skylake processors such as the Core i5 6200U, while the Intel HD 5500 is present on Intel's 5th generation Broadwell CPUs such as the Core i5 5200U. While there is not much improvement over the latest generation, the Benchmark Score has still doubled compared to two generations of old GPU. The performance of the game certainly improved, and you would get better frame rates. Let's hope to see an even better integrated GPU in the next 8th Generation! Comparison with Nvidia GeForce 910M & 920M Nvidia GeForce 910M & 920M are the cheapest GPUs in the Nvidia GeForce 900 series, and you should avoid them at all costs. The Intel HD Graphics 620 Integrated GPU is much better when compared to them. Now, there's no point buying a Notebook with a dedicated weak GPU like one of those. Comparison with AMD Radeon R5 M430 & R7 M445 AMD Radeon R5 M430 & R7 M445 are AMD's low and medium range graphics cards. With the Intel HD 620 leading again suggests that there is no point buying a Laptop powered by an AMD R7 M445 or R5 M430 GPU. While the R7 M445 is equally good and can be even better at real-world performance, I still advise you to avoid it. Instead of choosing any of these, I suggest you go for a better GPU like the GeForce 940MX. Or you can also simply stick with the integrated graphics instead of paying extra for these GPUs. Comparison with Nvidia GeForce 930MX & 940MX Finally, here are some GPUs that perform better than the Intel HD 620 Graphics. The Nvidia GeForce 940MX and 930MX score is higher than the previous one and does a better job in the Battle Intel HD 620 vs. Nvidia GeForce. So, you're wondering how much difference these 300 points would make to real-world performance? Well, in the HP AU1111TX, with the Nvidia 940MX, I get 60 fps in GTA V in medium settings and around 35 fps when I change to the Intel HD 620. This FPS should remove your confusion regarding the performance difference between HD 620 and 940 MX. Intel HD Graphics 620 Gaming Benchmark System Specification for Above Processor Benchmarks: Intel Core i5 7200U RAM: 8GB DDR4 Storage: 1TB HDD to 5400 RPM Resolution: 1366x768 pixels Graphics settings: Smaller/Low Laptop: HP Pavilion AU1111TX Opinion on the benchmarkbase In the chart above, you can see a long list of games I tested with Intel HD Graphics 620 on my HP Pavilion AU1111TX laptop. The resolution in these games was 1366x768 and the graphics settings were low or lower. Most of the games I played with this GPU were not as demanding games. To show a list of games that can be played, I tested only those games of which I was sure it would run at a playable frame rate. GTA V, CSGO, The Elder Scrolls V: Skyrim are playable and we also discuss their gameplay in the next section. Games like FIFA 17, Rocket League, SIMS 4 and League of Legends can reach an FPS close to 60. If you are a big fan of any of these games, then it is good news for you. You can play Overwatch at 42 frames per second on average. Batman: Arkham City, World of Warcraft and Tomb Raider (2013) can be played at 45 FPS. Note that you can also easily run the predecessors of any of the games I mentioned in the chart above. Batman: Arkham Origins is also playable, but I can't say the same for Arkham Knight. Unfortunately, you won't be able to play games like Rise of the Tomb Raider, and The Witcher 3. In Far Cry 3 and Fallout 4, the FPS average is 24, while it is 33 in the case of Crysis 3. In Fortnite: Battle Royale, you can expect about 30-40 frames per second at 720p. To find other cheap GPUs that can play Fortnite, check out: List of Fortnite Bill of Money-To-Play GPUs. You'll have a hard time trying to play Far Cry Primal, as it won't even be playable FPS. But most older games released before 2014 or 2013 should go well without problems. Want to improve FPS in Games? Follow this guide. Video editing and rendering of video performance editing, rendering, and other GPU-intensive tasks are generally not recommended in an integrated graphics processor. Tools like AutoCAD and SolidWorks will work, but the experience won't be good enough. There will be the same situation in case of video editing software like Adobe Premiere Pro CC, Sony Vegas Pro, Camtasia Studio, etc. Rendering performance will be poor when compared to a dedicated GPU. So if you're a creator or need to use GPU-intensive tools, that's not for you. I will recommend that you buy some other Laptop with at least one decent GPU like the Nvidia 940MX or MX150. For even better performance, you can consider the GTX 1050 and GTX 1050 Ti. Intel HD 620 Gameplay and Review As we've seen in benchmarks, this GPU can play most games not so demanding in HD resolution. The performance of the game certainly improved compared to the previous one. Considering it's just an integrated GPU, performance is appreciable. But sometimes benchmarks aren't enough, you need gameplay videos to get an idea of real-world performance. For casual gaming, the Intel HD 620 may be your best bet. But if you can spend a few more dollars, then the GeForce 940MX would provide you with better value for your money. To see how well this GPU performs in real life, you should check out counter-strike: Global Offensive, GTA V and Skyrim Gameplay below. Counter-Strike: Global Offensive is giving about 50-60 frames per second on average in low settings and resolution of 1366x768. CS: GO performs very well on an integrated chart, but as long as the settings are not too high and the resolution is low. It will still be playable in 1920x1080 but at a lower FPS. GTA V Gameplay in Intel HD Graphics 620 As you can see in the video, if you want to play GTA V then you can expect an average of 30 fps. This performance is not bad for a Laptop without a Dedicated Graphics Card. Also, you should keep in mind that GTA V is a very optimized game. But that doesn't mean the Intel HD 620 can handle the new demanding games of 2016 and 2017. Games like Arkham Knight, Witcher 3, Rise of the Tomb Raider would not be playable on the Intel HD 620. To play these games at least 30 fps, you would need Nvidia GeForce 940MX or better. Skyrim Gameplay on Intel HD 620 Graphics With the gameplay of Skyrim, we can conclude that you will have around 35-45 fps. Other games released before 2015 should perform similarly to GTA V and Skyrim. Games older than 4-5 years will easily give more than 60 fps. So the Intel HD 620 isn't bad for casual gaming, but it's also not so good for serious gaming. Far Cry 5 Gameplay Here's how it fares in the latest titles like Far Cry 5 in lower graphics settings and resolution. Download Intel HD 620 Drivers You can download the latest driver for this GPU on your OEM Laptop website or on Intel's official website. This driver supports 64-bit windows 10. Be sure to keep the driver up to date for the best performance. This is because new updates often fix many bugs and bring many improvements. Download link: Intel® HD Graphics 620 Driver for Windows 10 We've passed the specifications, benchmarks & Gaming Performance of Intel HD Graphics 620. We note that Intel has significantly improved the performance of Kaby Lake Series GPUs. Although high's demanding games are not yet playable. For casual gaming, this is one of the best built-in graphics cards you can get with 7th Generation Intel processors. For best performance, buy a Laptop that has a dedicated GPU like the Nvidia 940MX or the new GeForce MX150. You can mount your own PC at a much lower price. This you can go with GPUs like the AMD RX 550 or the Nvidia GT 1030. Here is our comparison with these graphic charts Comparison AMD RX 550 vs Nvidia GT 1030 If you need suggestions on laptops with 7th generation Core i5 processor and Nvidia GeForce 940MX GPU, then I recommend you choose the HP AU620TX or ASUS R558UQ. If you go with Asus R558UQ, you should upgrade your RAM by 4 GB for better performance during games. Nvidia also announced the successor to the 940MX this year and goes by the name GeForce MX150. A good MX150 Notebook that I can recommend is the Acer Aspire 5 A515-51G. I hope you enjoyed our analysis of the Intel HD 620 GPU. Sign up for more such posts. Here are the final rankings: ratings:

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