



SAPPHIRE
Professional Graphics Solutions

AMD FIREPRO™ W7100



AMD FirePro™ W7100 Workstation Graphics

World's first single slot professional graphics card with 8GB memory — be prepared for large engineering and creative projects.



Key Features:

- 8GB GDDR5 memory
- 256-bit memory interface
- Up to 160GB/s memory bandwidth
- Direct graphics memory access (DirectGMA)
- Double rate GeometryBoost
- Four standard DisplayPort outputs
- DisplayPort 1.2a support
- Maximum resolution (4096 x 2160) per output
- AMD Eyefinity multidisplay technology²
- AMD PowerTune technology³
- AMD ZeroCore Power technology³
- On-board Framelock-Genlock connector⁴
- <150W maximum power consumption
- Discreet active cooling solution
- 1792 stream processors
- 3.3 TFLOPS peak single precision
- 206 GFLOPS peak double precision
- OpenCL™, DirectX®, OpenGL API support
- PCIe® 3.0 compliant, x16 bus interface
- Full-height / full-length, single-slot form factor
- Planned minimum three-year life cycle
- Limited three-year warranty
- Microsoft® Windows 8.1, Windows® 7, and Linux (32- and 64-bit) support
- FCC, CE, C-Tick, BSMI, KCC, UL, VCCI, RoHS, and WEEE compliance

AMD FirePro™ W7100 professional graphics deliver exceptional performance and special features designed to accelerate high-end workflows for design, engineering, and media and entertainment professionals. As the first single slot workstation solution with 8GB of GPU memory, 4K multidisplay capabilities,¹ improved geometry performance, and HD multimedia engines, users can swiftly elevate projects to new heights.

Improved Geometry Performance

AMD FirePro™ W7100 graphics features double rate GeometryBoost, which is enabled in the AMD Graphics Core Next architecture. The W7100 GPU comes with four graphics engines that allow it to process four primitives per clock cycle – twice as much as the AMD FirePro™ W7000 GPU that's only capable of two triangles per clock cycle – and provides ultra-high geometry processing performance, enabling the smooth manipulation of complex models.

Lightning-Fast Multimedia Performance

Unlike its predecessor, the AMD FirePro™ W7100 graphics card features Ultra HD multimedia engines that help to accelerate 4K video playback, editing, and transcoding and enable ultra-fast encode HD (1080p) video encode, up to 12X faster than real-time encoding at 24 FPS.⁵

Next-Generation Display Capabilities

With four DisplayPort outputs, each AMD FirePro™ W7100 graphics card supports AMD Eyefinity technology and is capable of driving up to four 4K displays,¹ helping users to efficiently multitask across multiple applications and displays. AMD FirePro™ W7100 cards also support DisplayPort 1.2a and its new Adaptive-Sync feature.⁶

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Features	Benefits
AMD Graphics Core Next (GCN) Architecture	Efficiently balances compute tasks with 3D workloads, enabling multitasking designed to optimize utilization and maximize performance.
8GB GDDR5 GPU Memory	With a 256-bit memory interface and up to 160 GB/s of memory bandwidth, users can edit 4K video, layer in multiple effects and color correct, or load sizeable assemblies and data sets and manipulate them in real time.
DirectGMA (Direct Graphics Memory Access)	Bypasses any need to traverse the host's main memory, reducing CPU utilization and avoiding redundant transfers over PCIe®, resulting in high throughput, low-latency data transfers.
Double Rate GeometryBoost	Allows the GPU to process geometry data at a rate of twice per clock cycle. Triangle rates increase twofold relative to a GPU that does not possess GeometryBoost. The GPU on the W7100 cards features four graphics engines that allow it to process four primitives per clock cycle.
AMD Eyefinity Multidisplay Technology	Enables highly immersive and powerful multitasking experiences across multiple displays. Each AMD FirePro™ W7100 is capable of driving up to four displays at 4K resolutions each. ^{1,2}
DisplayPort 1.2a and Adaptive-Sync Support	Simultaneously outputs multiple independent audio streams and display content at resolutions beyond standard HD (maximum resolution of 4096 x 2160). Adaptive-Sync enables FreeSync technology from AMD that allows GPU control of display refresh rates for tear-free and jitter-free image quality when rotating models or viewing video content. ⁵
Ready for 4K	Equipped with four DisplayPort outputs with DisplayPort 1.2a support and six display engines, the AMD FirePro™ W7100 can drive up to three 4K displays at 60 Hz or drive up to four 4K displays at 30 Hz. ¹
3.3 TFLOPS of Peak Single Precision Floating Point Performance	Helps speed up time required to complete single precision floating point operations used within Simulations, Video Enhancement, Signal Processing, Video Transcoding, and Digital Rendering applications where high performance takes precedence over extreme accuracy.
OpenCL™ 2.0 ⁷	AMD FirePro™ W7100 cards are designed to support OpenCL 2.0. Tap into the parallel computing power of its GPU and get up to 3.3 TFLOPS of peak single precision compute power to accelerate compute-intensive tasks.
AMD PowerTune Technology ³	Performs real-time analysis of applications that utilize a GPU. In the event that an application is not making the most of the power available to the GPU, AMD PowerTune technology can improve that application's performance by raising the GPU's clock speed by up to 30% automatically.
AMD ZeroCore Power Technology ³	AMD ZeroCore Power technology leverages AMD's leadership in notebook power efficiency to grant our desktop GPUs the ability to power down when your monitor is off, also known as the "long idle state."



1. Three 4K displays at 60Hz requires displays with DisplayPort 1.2 interfaces with support for HBR2 (for SST) or HBR2 with MST. Four 4K displays at 30Hz requires displays with at least one DisplayPort interface. Four 4K displays at 30Hz with HDMI 1.4a interface can also be supported via DisplayPort to HDMI adapters that support HDMI 4K output. Six full-HD displays requires DP 1.2 MST hub or at least two monitors capable of DP 1.2 daisy-chaining. FP-119
2. AMD Eyefinity technology supports up to six DisplayPort™ monitors on an enabled graphics card. Supported display quantity, type, and resolution vary by model and board design; confirm specifications with manufacturer before purchase. To enable more than two displays, or multiple displays from a single output, additional hardware such as DisplayPort-ready monitors or DisplayPort 1.2 MST-enabled hubs may be required. A maximum of two active adapters is recommended for consumer systems. See www.amd.com/eyefinityfaq for full details.
3. AMD PowerTune and AMD ZeroCore Power are technologies offered by certain AMD FirePro™ products, which are designed to intelligently manage GPU power consumption in response to certain GPU load conditions. Not all products feature all technologies – check with your component or system manufacturer for specific model capabilities.
4. Requires ATI FirePro™ S400 synchronization module.
5. AMD FirePro™ W7100 graphics encoding throughput for 1080p video is 315 FPS, approximately 12x faster than real-time, or 24 FPS. System configuration: AMD Phenom II 1055T 2.8 GHz, 8GB RAM, Win 8.1 64-bit, AMD 14.30 beta. AMD does not provide a license/sublicense to any intellectual property rights relating to any to any standards, including but not limited to any audio and/or video codec technologies such as AVC/H.264/MPEG-4, AVC, VC-1, MPEG-2, and DivX/xVid.
6. FreeSync is an AMD technology designed to reduce or eliminate screen tears in games and videos by allowing the monitor's refresh rate to be controlled by and synchronized to the graphics card. Requires DisplayPort 1.2a compliant monitors that support DisplayPort Adaptive-Sync and an AMD FirePro™ W5100, W7100, W8100, or W9100 graphics card with forthcoming FreeSync-enabled driver. Support for use with multiple monitors planned. Confirm supported technologies with system manufacturer before purchase.
7. OpenCL 1.2 conformance expected. AMD plans to release OpenCL 2.0 drivers for enabled AMD FirePro™ W5100, W7100, W8100, and W9100 graphics cards in Q1 2015; conformance testing is planned at that time. Previous-generation AMD FirePro™ products may not support OpenCL 2.0.

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SAPPHIRE PGS (Professional Graphics Solutions) is a business unit within SAPPHIRE Technology for Professional Graphics. It provides various types of professional graphics display solutions for workstation and professional clients. SAPPHIRE PGS supports the full range of 3D professional applications for professional users. For industrial customers, SAPPHIRE PGS integrates display related graphics application solutions for broadcasting, digital signage, medical, surveillance, ATC (Air Traffic Control) and other markets. SAPPHIRE PGS is focused on providing our customers with highly appropriate solutions and outstanding pre and after sales consultancy and services.

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