RADEON PRO SSG

A Leap Forward in GPU Design

AMD

THE WORLD'S FIRST GPU TO BREAK THE TERABYTE MEMORY BARRIER

Modern GPUs are continually evolving to keep pace with the growing demands of users. Methods and algorithms such as ray tracing for high-end rendering and non-linear video editing place high demands on the GPU's graphics compute capabilities. These demands extend to the system level when applications require large data sets to be used.

The Radeon™ Pro SSG based on the "Vega" GPU architecture, is a disruptive force in the professional graphics space, bringing with it cutting-edge technologies like the High Bandwidth Cache Controller (HBCC), a state-of-the-art memory system that removes the limitations of traditional graphics memory.

The Ultimate GPU for 8K Content Creation

The Radeon™ Pro SSG comes equipped with 2TB of onboard memory, the most memory on a graphics card ever. This revolutionary advancement in graphics technology enables vastly higher performance for the most demanding use-case scenarios. Easily make real-time material and complex lighting changes of rendered objects and scenes and generate near real-time photorealistic walkthroughs of rendered visualizations. Create high-fidelity real-time VFX pre-visualizations to help inform and make decisions on-the-fly. Handle 8K, VR, 360 video stitching and other highly demanding graphics workloads effortlessly on the Radeon™ Pro SSG.

Key Features

Stream Processors:	**4096**
Peak Engine Clock:	**1500 MHz**
Memory Clock:	**945 MHz**
Peak Single Precision Computer:	**Up to 12.3 TFLOPS**
Peak Triangles/s:	**6 BT/s**
Memory Size:	**2TB SSG + 16GB HBC with Error Correcting Code (ECC) Memory[1]**
Memory Interface:	**2048 bit**
Max. Memory Bandwidth:	**483.84 GB/s**
Native Display Outputs:	**6 DisplayPort™ 1.4 HDR Ready[2]**

10-bit Color Support

8K Display Support (Single monitor, single or dual-cable)

Framelock/Genlock Support

OS Support: Windows® 7, Windows® 10, Linux® (64-bit)

API Support: OpenCL™ 2.0, OpenGL® 4.5, DirectX® 12.1, Vulkan® 1.0

Typical Board Power: <300W

Power Requirements: 1x 6 pin, 1x 8 pin power connection

FEATURES AND BENEFITS
2TB ONBOARD SOLID STATE GRAPHICS (SSG) MEMORY

The Radeon™ Pro SSG professional graphics card is the world's first graphics card that has 2TB of solid state graphics memory on board. The Radeon™ Pro SSG physically co-locates high performance NVMe's alongside the high performance "Vega" based GPU to create an optimized path for transferring and processing large data sets.

HOW SSG WORKS
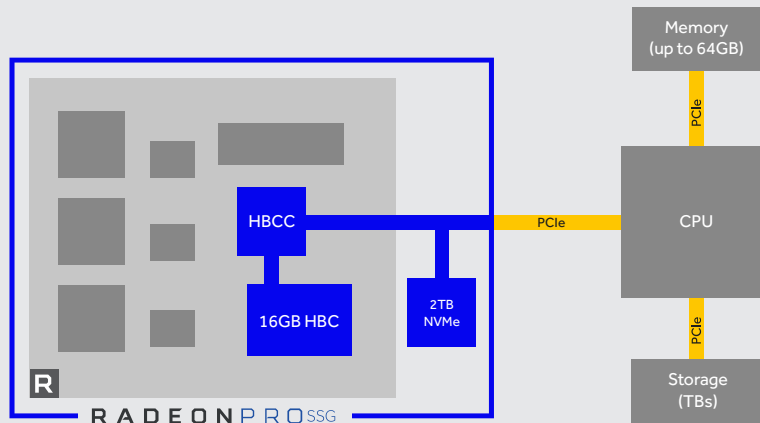
EFFICIENT GEOMETRY ENGINE

The new geometry pipe in the "Vega" GPU architecture processes millions of polygons due to its efficient load balancing.
The Radeon™ Pro SSG offers up to 2.6x peak geometry throughput per clock[4] to significantly speed up modelling and design workflows in various rendering engines. Modelling applications will be able to render in real-time heavy 3D models and large scenes.

ENHANCED PIXEL ENGINE

Updated rasterizer technology to improve cache locality and overdraw, enhancing rendering efficiency and leaving more headroom to crank up quality settings while maintaining smooth 3D rendering.

RADEON™ VR READY CREATOR[5]

Enable extraordinary performance and world-class innovation with Radeon™ VR Ready Creator products like the Radeon™ Pro SSG. Empower VR content creators and experience designers with amazingly powerful and capable development tools in the AMD LiquidVR™ SDK[3].

RAPID PACKED MATH

New compute unit design provides super-charged pathways to provide double the processing throughput when using 16-bit data types, accelerating demanding workloads including image/video processing, ray tracing, and artificial intelligence.

FOOTNOTES

1. ECC support is limited to the HBM2 memory and ECC protection is not provided for internal GPU structures.

2. As of June 2017. Product is based on the DisplayPort 1.4 Specification published February 23, 2016, and has passed VESA's compliance testing process (excluding HDR) in June 2017. GD-123

3. For more information, visit www.amd.com/en/technologies

4. Data based on AMD Engineering design of "Vega" GPU architecture. Radeon R9 Fury X has 4 geometry engines and a peak of 4 polygons per clock. Vega is designed to handle up to 11 polygons per clock with 4 geometry engines. This represents an increase of up to 2.6x. VG-3

5. Radeon VR Ready Creator Products are select Radeon Pro and AMD FirePro™ GPUs that meet or exceed the Oculus Rift or HTC Vive recommended specifications for video cards/GPUs. Other hardware (including CPU) and system requirements recommended by Oculus Rift or HTC Vive should also be met in order to operate the applicable HMDs as intended. As VR technology, HMDs and other VR hardware and software evolve and/or become available, these criteria may change without notice.