



Design and Simulate without Compromise

With AMD FirePro™ & SolidWorks® 2012

AMD FIREPRO™ IS FULLY CERTIFIED FOR SOLIDWORKS

And Enables Advanced Workflows at an incredible Value



The
EDGE
you expect



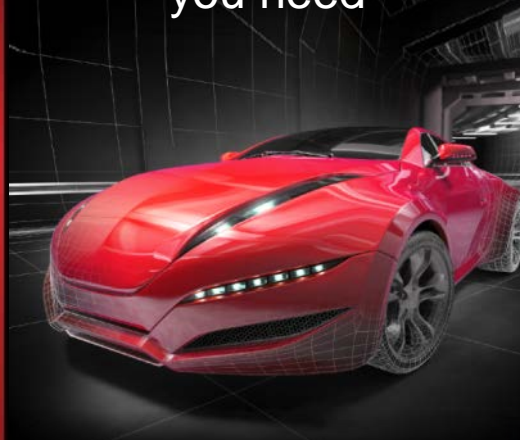
OpenGL
4.2

AMD Eyefinity
MULTI-DISPLAY TECHNOLOGY



OpenCL™ DirectX®11

The
PERFORMANCE
you need



Leading Edge
Performance at Every
Price Point

Windows® & Linux®

The
RELIABILITY
you demand



Unified Drivers
OEM Qualifications
ISV Certifications

*AMD Eyefinity technology can support multiple displays using a single enabled ATI FirePro™ professional graphics card; the number of supported displays varies by card model. Microsoft® Windows® 7, Window Vista® or Linux® is required in order to support more than 2 displays. Depending on the card model, native DisplayPort™ connectors and/or certified DisplayPort™ active or passive adapters to convert your monitor's native input to your card's DisplayPort™ or MiniDisplayPort™ connector(s) may be Required.



AMD FIREPRO™ PROFESSIONAL GRAPHICS CARDS



	ATI FirePro™	New AMD FirePro™
ULTRA HIGH	FirePro V9800 4GB GDDR5 - 6xDP	
HIGH	FirePro V8800 2GB GDDR5 - 4xDP	
	FirePro V7800 2GB GDDR5 - 2xDP & 1xDVI	FirePro V7900 2GB GDDR5 - 4xDP
MID-RANGE	FirePro V5800 1GB GDDR5 - 2xDP & 1xDVI	FirePro V5900 2GB GDDR5 - 2xDP & 1xDVI
ENTRY	FirePro V4800 1GB GDDR5 - 2xDP & 1xDVI	FirePro V4900 1GB GDDR5 - 2xDP & 1xDVI
	FirePro V3800 512MB DDR3 - 1xDP & 1xDVI	FirePro V3900 1GB DDR3 - 1xDP & 1xDVI



AMD FIREPRO FOR SOLIDWORKS

Key Selling Points



1. Powerful Real-time Previews with RealView®
2. More Accurate Designs with Anti-Aliasing
3. Higher Productivity with Multiple Displays
4. Workflow Performance for CAE



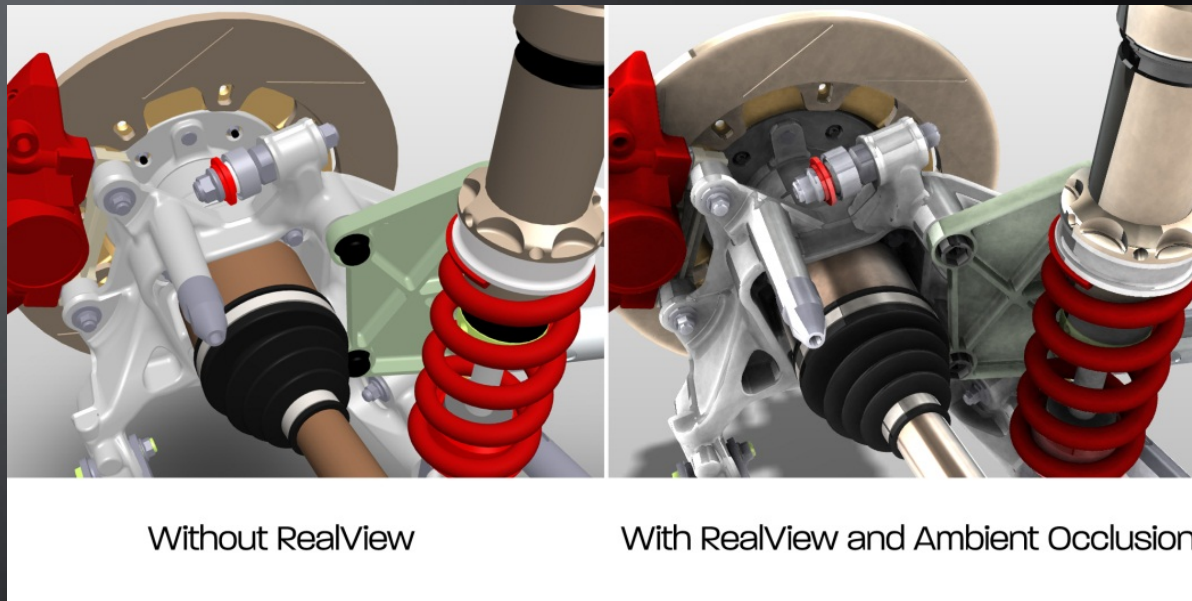
AMD FIREPRO WITH SOLIDWORKS

Powerful Real-time Previews with RealView



AMD FirePro accelerates RealView

– SolidWorks 2012 now offers RealView with Ambient Occlusion (AO); AO creates more depth and realism reducing the need for ray-traced rendering.



- ✓ AMD FirePro is optimized for this feature and accelerates RealView with AO resulting in new levels of real-time performance
- ✓ RealView is not supported on consumer graphics cards

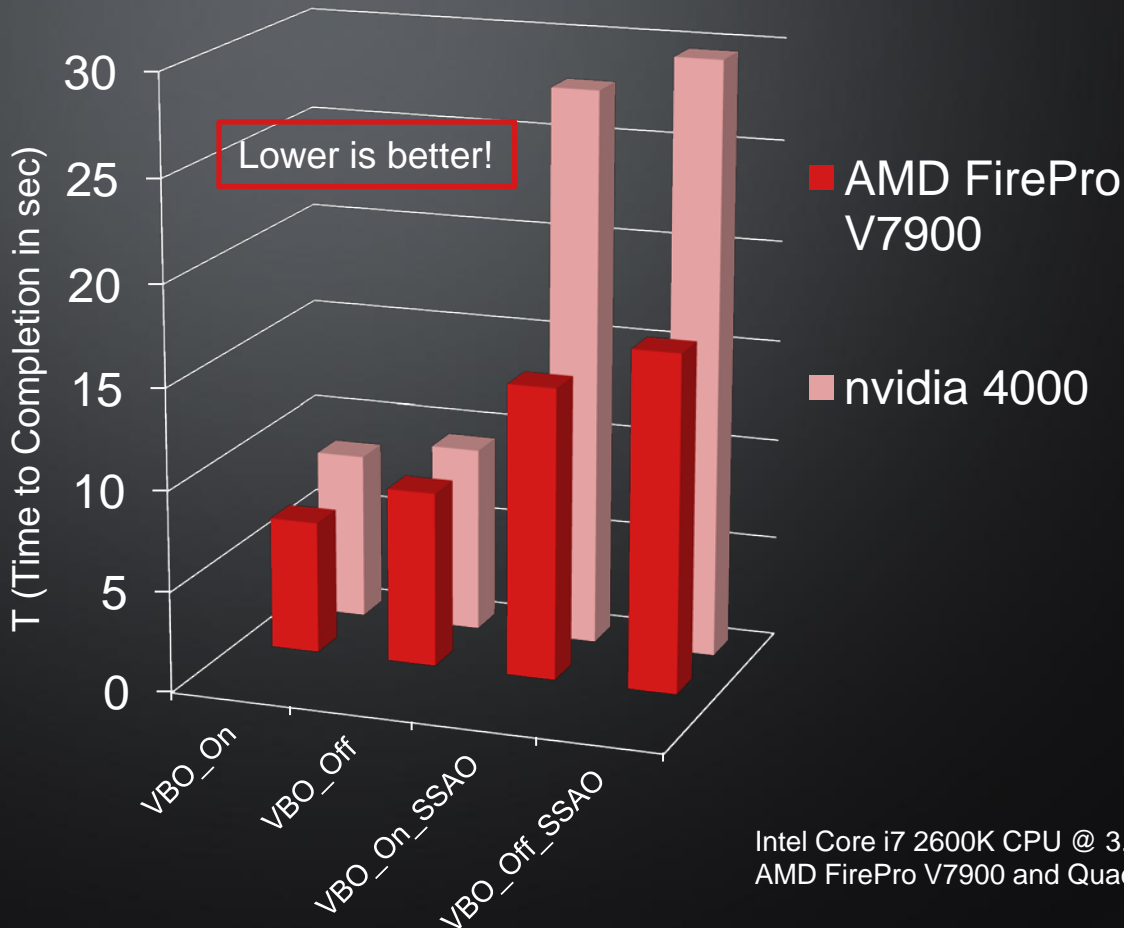


AMD FIREPRO WITH SOLIDWORKS

Powerful Real-time Previews with RealView



AMD FirePro is significantly faster than Quadro



Camera Model rendered with RealView and Ambient Occlusion

Intel Core i7 2600K CPU @ 3.4GHz, 16GB RAM, Windows 7 X64
AMD FirePro V7900 and Quadro 4000, SolidWorks 2012 PR1



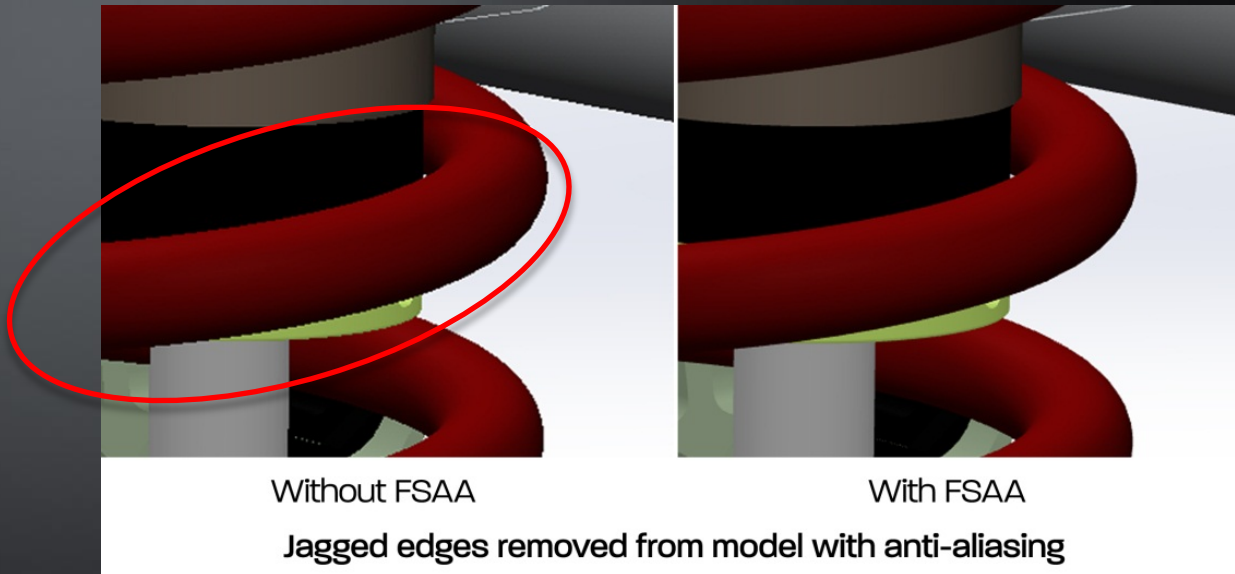
AMD FIREPRO WITH SOLIDWORKS

More Accurate Designs with Anti-Aliasing



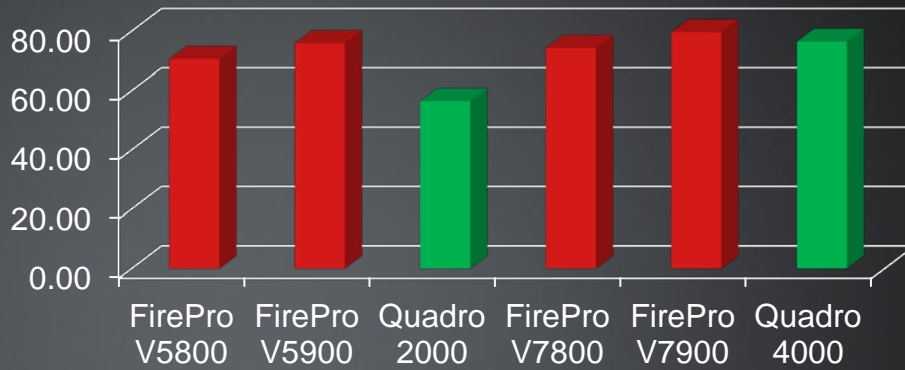
AMD FirePro offers performance for Full-Scene Anti-Aliasing (FSAA)

– FSAA removes coarse edges from contours of geometries in real-time. This results in higher-quality visuals and more accurate representation of designs.

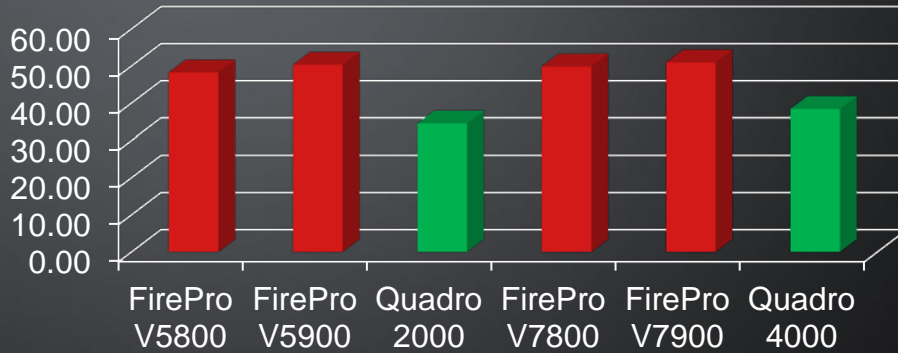


- ✓ AMD FirePro offers the right balance of performance and value to use FSAA
- ✓ The GeometryBoost feature in the AMD FirePro V5900 and V7900 means FSAA can now be turned on in SolidWorks permanently without slowing down the workflow

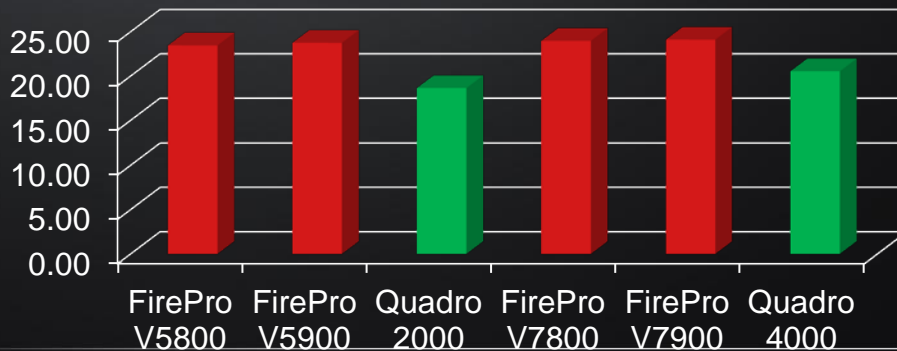
Camera (fps)



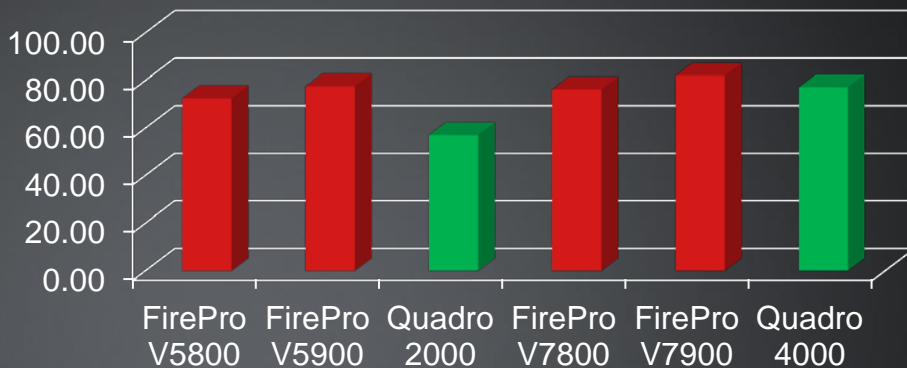
Explorer (fps)



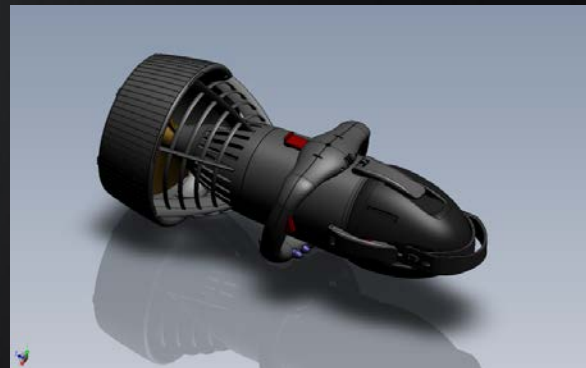
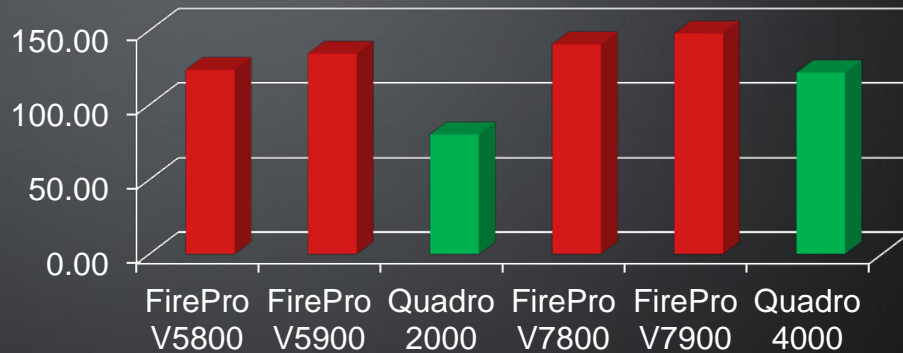
AMD Airplane Exterior (fps)



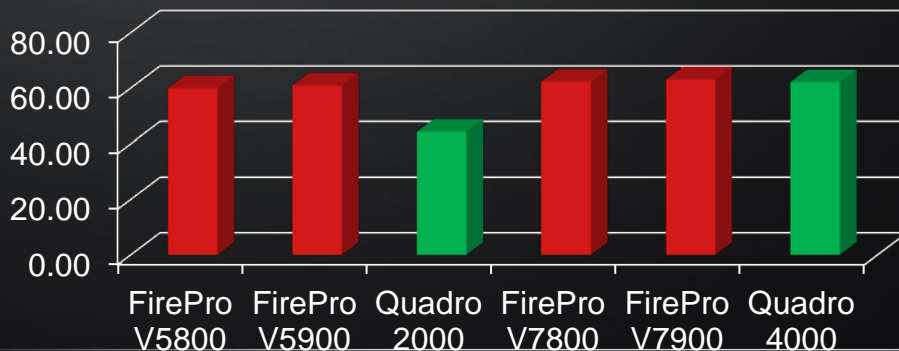
Camera (fps)



Explorer (fps)



AMD Airplane Exterior (fps)



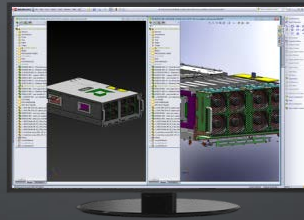
AMD FIREPRO WITH SOLIDWORKS

Higher Productivity with Multiple Displays

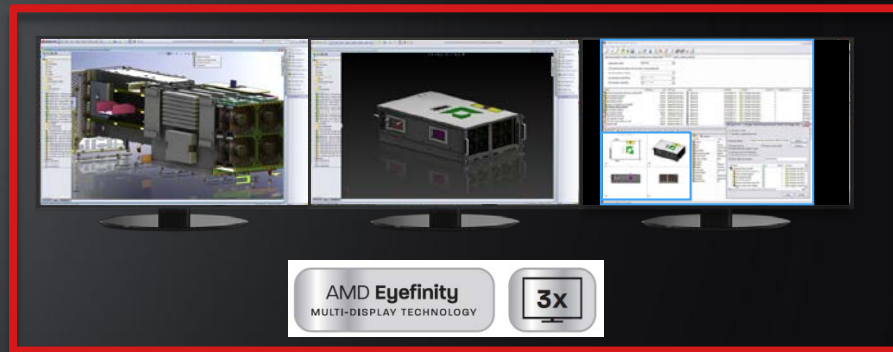


AMD FirePro with AMD Eyefinity is the best choice for multi-display workflows

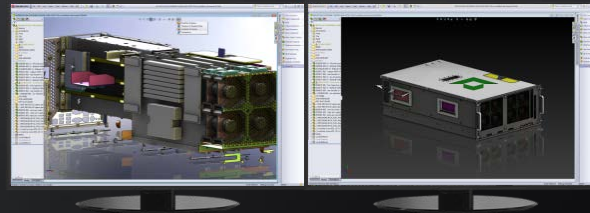
– The new span mode in SolidWorks 2012 allows users to work with three displays; this supports advanced design workflows, where SolidWorks users can switch more easily between applications, including SolidWorks Simulation and PhotoView 360



Traditional
Single-Display
Set-Up



Three displays
provide complete
overview of your
workflow



Some
documents
are still not
visible!

- ✓ Only AMD FirePro with AMD Eyefinity multi-display technology supports the use of three displays with one GPU.
- ✓ Enabled by AMD Eyefinity multi-display technology, users can now visualize their workflow across a larger display area and therefore work more efficiently, make better decisions and complete projects faster.



AMD FIREPRO WITH SOLIDWORKS

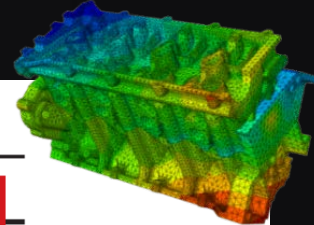
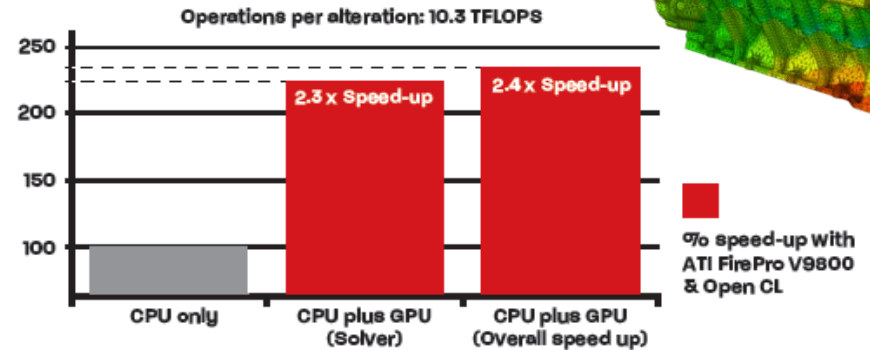
Workflow Performance for CAE



AMD FirePro Accelerates Your Simulation.

– Enabled by OpenCL, AMD FirePro GPUs can be used to accelerate calculations in Computer Aided Design (CAE) software such as Finite Element Analysis (FAE) – tasks traditionally carried out by CPUs.

ABAQUS/STANDARD SERVER BENCHMARK (S4B)



Testing conducted on a Dell T7400 w/Intel Xeon E5405 CPU, 64GB RAM, Red Hat OS v5.5, ATI FirePro™ V9800, AMD Catalyst Pro 10.12, Dassault Systemes SIMULA Abaqus/Standard 6.11

- ✓ AMD FirePro provides the stability, rendering and computational performance needed to complete projects faster.
- ✓ AMD FirePro builds entirely on open standard technology - such as OpenCL - making it a future-proof solution that keeps up with your needs yet to come.



AMD FIREPRO WITH SOLIDWORKS

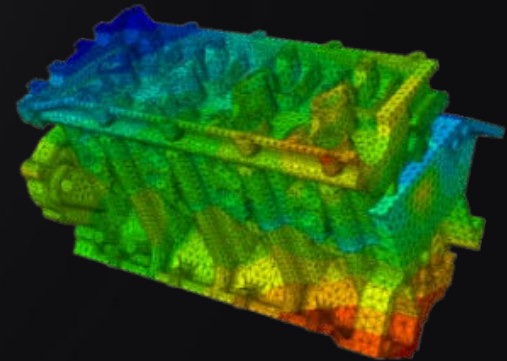
Workflow Performance for CAE



„By using SIMULIA’s robust finite element and multi-physics analysis solutions product developers are able to experience the realistic performance of their designs on their desktop which saves significant time and money.”

Matt Dunbar

-- R&D Technology Director, SIMULIA, Dassault Systèmes



SOLIDWORKS 2012 AND AMD FIREPRO

Recommended Configurations



Model Complexity: Low-Med
Visualization needs: Low
Simulation needs: Low



MSRP =
US \$189

AMD FirePro V4900

- 1GB GDDR5 Memory
- 480 Stream Processors
- 64GB/s Memory Bandwidth
- 1x DVI-I + 2x DisplayPort (DP1.2)



Model Complexity: Med-High
Visualization needs: Med
Simulation needs: Low



MSRP =
US \$599

AMD FirePro V5900

- 2GB GDDR5 Memory
- 512 Stream Processor
- GeometryBoost
- 64GB/s Memory Bandwidth
- 1x DVI-I + 2x DisplayPort (DP1.2)



Model Complexity: High
Visualization needs: High
Simulation needs: Med



MSRP =
US \$799

AMD FirePro V7900

- 2GB GDDR5 Memory
- 1280 Stream Processors
- Geometry Boost
- 160GB/s Memory Bandwidth
- 4x DisplayPort (DP1.2)
- Framelock / Genlock & 3D Stereo



SOLIDWORKS 2012 AND AMD FIREPRO

Recommended Configurations



AMD FirePro V4900



AMD FirePro V5900



AMD FirePro V7900

Model Size/Complexity



Visualization



Simulation



SolidWorks Standard
SolidWorks Premium
SolidWorks Professional

SolidWorks Standard
SolidWorks Premium
SolidWorks Professional

SolidWorks Standard
SolidWorks Premium
SolidWorks Professional

Casual: Casual modeling and document viewing needs; work on creating smaller parts, assemblies, and drawings. Could benefit from using two monitors.

Expert: Run SolidWorks more often and create medium to larger parts, assemblies, and drawings; occasional rendering and simulation work. Could benefit from using three monitors for integrating workflow.

Advanced: Full-time SolidWorks users who create large assemblies and drawings; frequent rendering and simulation work. Could benefit from using four or more monitors for an immersive experience.





„Delivering better products faster is paramount for SolidWorks users. The top-to-bottom feature set and performance of the new AMD FirePro family of products can give our users the efficiency that canboos their productivity and creativity.“

Nick Iwaskow

-- Manager of Alliances at Dassault Systemes SolidWorks Corp.



AMD FIREPRO WITH SOLIDWORKS

Summary



1. Powerful Real-time Previews with RealView

2. More Accurate Designs with Anti-Aliasing

3. Higher Productivity with Multiple Displays

4. Workflow Performance for CAE





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AMD FIREPRO WITH SOLIDWORKS

Additional Material



Next-generation AMD FirePro Features



Geometry Boost

- Provides more GPU performance - compared to previous generations - by processing twice as much geometry data (*AMD FirePro V5900 and V7900 only*)
- Benefit: Allows users to smoothly handle complex models

New GDDR5 Memory Interface

- Provides maximum bandwidth for accessing large model data quickly
- Benefit: Allows users to handle larger data sets

AMD PowerTune Technology

- Dynamically adjusts GPU performance to workload requirements
- Benefit: Saves power when full GPU performance is not required

DisplayPort 1.2

- Latest DisplayPort (DP) standard provides twice the bandwidth of DP1.1
- Benefit: Supports higher resolution displays and more comprehensive 3D stereo

AMD FirePro™ V4900 Professional Graphics

Specifications and Performance



	AMD FirePro V4900	AMD FirePro V4800	<i>nVidia Quadro 600</i>
	Yes – 3 Displays (1x DVI-I + 2x DP1.2)	Yes – 3 Displays (1x DVI-I + 2x DP1.1)	<i>No – 2 Displays only</i>
Graphics Memory	1GB GDDR5	1GB GDDR5	1GB GDDR5
Memory Bus Width	128-bit	128-bit	<i>128-bit</i>
Memory Bandwidth	64GB/s	64GB/s	<i>25.6GB/s</i>
Stream Processors	480 (“Turks” GPU)	400	<i>n/a</i>
DisplayPort Standard	1.2	1.1	<i>1.1</i>

The new AMD FirePro V4900 graphics card is the most cost-effective solution for 3-display workflows!

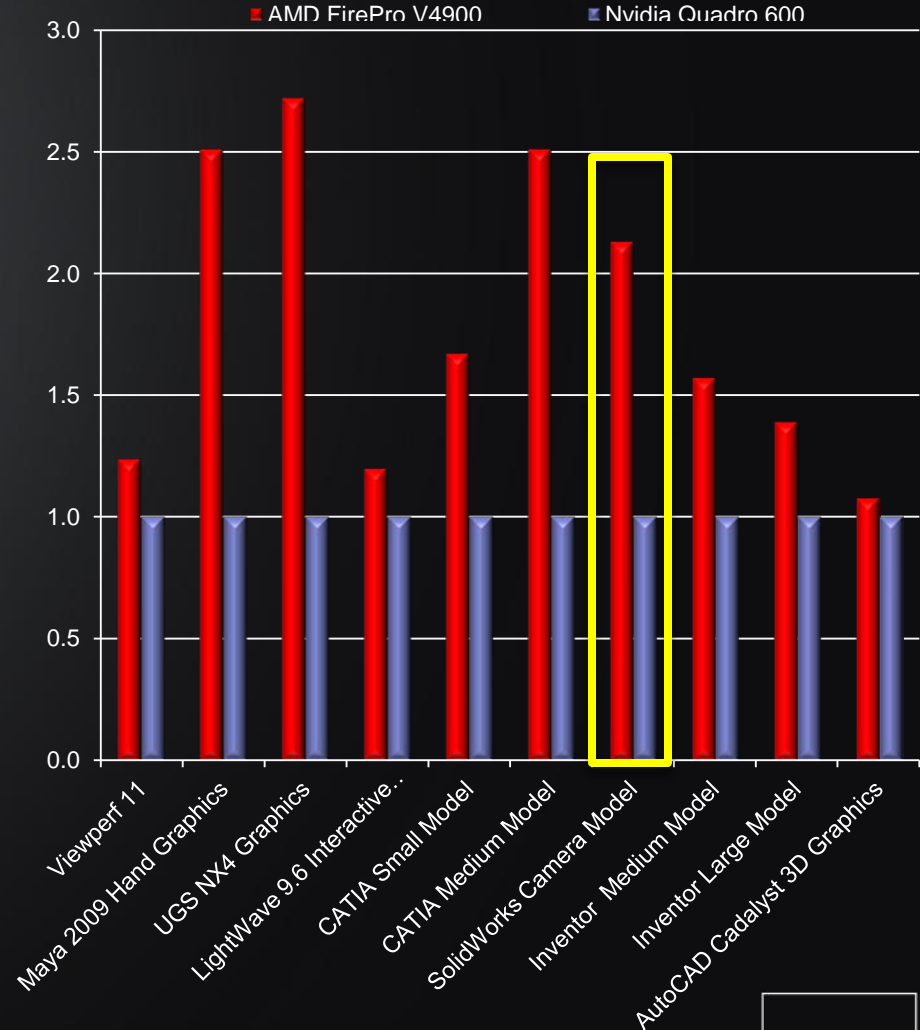


Delivering Performance That Matters

AMD FirePro™ V4900



	AMD FirePro V4900	Nvidia Quadro 600
GPU	"Turks"	GF108
Memory Size	1GB	1GB
Memory Type	128-bit GDDR5 64.0 GB/s	128-bit GDDR5 25.6 GB/s
I/O	1 Dual-link DVI 2 DisplayPort 3 Total Displays*	1 Dual-link DVI 2 DisplayPort 2 Total Displays



http://www.nvidia.com/content/PDF/product-comparison/Product_Comparison_2000D.pdf
As of 9/13/2011

Testing by AMD performance lab
System config: Intel X3680 @ 3.33GHz, Intel X58, 16GB RAM, Win7 Prof 64-bit SP1
AMD driver: 8.88 beta
Nvidia driver: 275.65



AMD FirePro™ V5900 Professional Graphics

Specifications and Performance



	AMD FirePro V5900	AMD FirePro V5800	<i>nVidia Quadro 2000</i>
	Yes – 3 Displays (1x DVI-I + 2x DP1.2)	Yes – 3 Displays (1x DVI-I + 2x DP1.1)	<i>No – 2 Displays only</i>
Graphics Memory	2GB GDDR5	1GB GDDR5	1GB GDDR5
Memory Bus Width	256-bit	128-bit	128-bit
Memory Bandwidth	64GB/s	64GB/s	41GB/s
Stream Processors	512 (“Cayman” GPU)	800 (“Juniper” GPU)	n/a
DisplayPort Standard	1.2	1.1	1.1

The new AMD FirePro V5900 graphics card is the only solution in its price range offering 2GB graphics memory!



Delivering Performance That Matters

AMD FirePro™ V5900



	FirePro V5900	Quadro 2000
GPU	"Cayman"	GF106
Memory Size	2GB	1GB
Memory Type	256-bit GDDR5 64.0 GB/s	128-bit GDDR5 41.6 GB/s
I/O	1 dual-link DVI 2 DisplayPort 3 Total Displays	1 dual-link DVI 2 DisplayPort 2 Total Displays



http://www.nvidia.com/content/PDF/product-comparison/Product_Comparison_2000D.pdf

As of 3/23/2011

Testing based on AMD performance lab
 System config: Intel W3680 @ 3.33GHz, Intel X58, 8GB RAM, Win7 Prof 64-bit
 AMD driver: 8.86 beta
 Nvidia driver: 267.79
 SPECcapc service mark is trade mark of Standard Performance Evaluation Corporation – see SPEC.org



AMD FirePro™ V7900 Professional Graphics

Specifications and Performance



	AMD FirePro V7900	AMD FirePro V7800	nVidia Quadro 4000
	Yes – 4 Displays (4x DP1.2)	Yes – 3 Displays (1x DVI-I + 2x DP1.1)	<i>No – 2 Displays only</i>
Graphics Memory	2GB GDDR5	2GB GDDR5	2GB GDDR5
Memory Bus Width	256-bit	256-bit	<i>256-bit</i>
Memory Bandwidth	160GB/s	128GB/s	<i>89.6GB/s</i>
Stream Processors	1280 (“Cayman” GPU)	1440 (“Cypress” GPU)	<i>n/a</i>
DisplayPort Standard	1.2	1.1	<i>1.1</i>

The new AMD FirePro V7900 graphics card has more memory bandwidth even than a Quadro 6000!

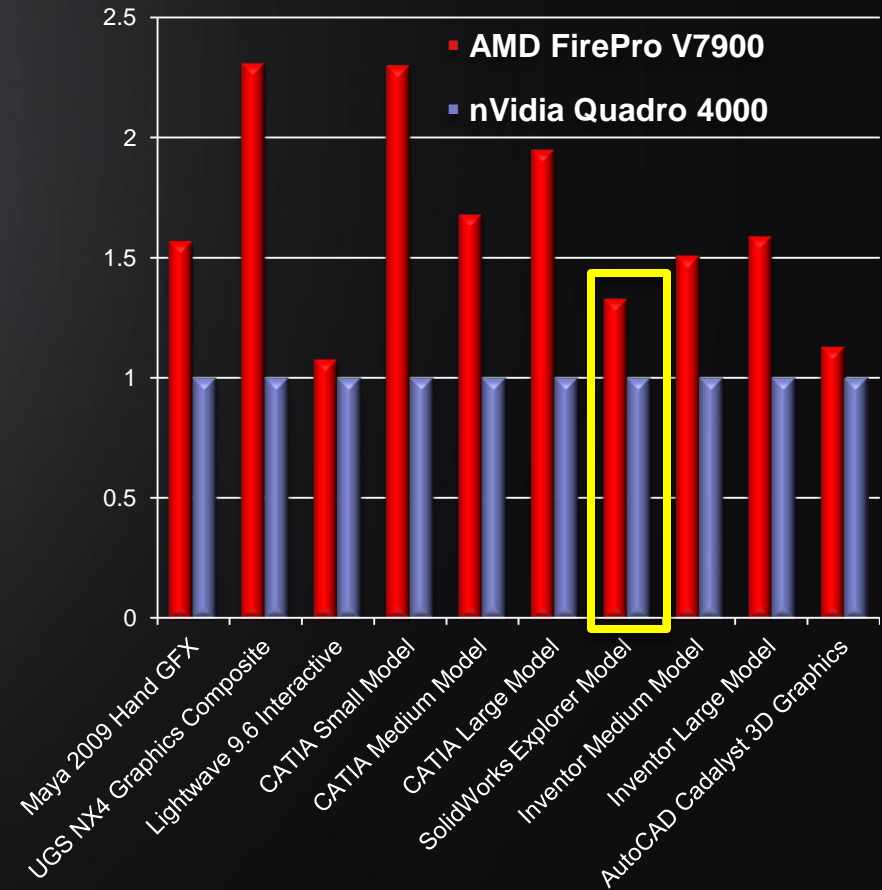


Delivering Performance That Matters

AMD FirePro™ V7900



	FirePro V7900	Quadro 4000
GPU	"Cayman"	GF100
Memory Size	2GB	2GB
Memory Type	256-bit GDDR5 160.0 GB/s	256-bit GDDR5 89.6 GB/s
I/O	4 DisplayPort 4 Total Displays	1 dual-link DVI 2 DisplayPort 2 Total Displays



http://www.nvidia.com/content/PDF/product-comparison/Product_Comparison_2000D.pdf

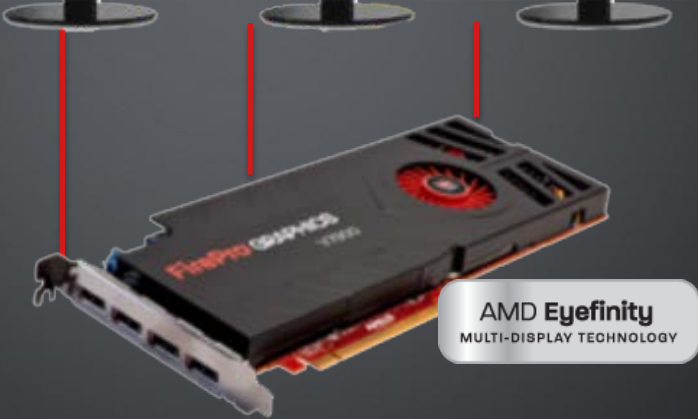
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AMD FIREPRO FOR SOLIDWORKS

The Best Choice for Multi-Display Workflows



Workstation 1

1x AMD FirePro V7900 Card

Number of monitors	3
PCIe slots required	1
Power consumption	150 Watts

VS.



Workstation 2

2x Nvidia Quadro 4000 Cards

Number of monitors	3
PCIe slots required	2
Power consumption	~280 Watts

2x
System
Costs



AMBIENT OCCLUSION (AO) IN REALVIEW



What is AO?

- Ambient occlusion is a global lighting method that adds realism to models by controlling the attenuation of ambient light due to occluded areas.

How do I use it?

- AO can be used in different modes within SolidWorks 2012 to add depth to models and assemblies
- Even with very large assemblies AO can add real-time so can be left on and not just used for final checking
- Its a function of the graphics card “shader” so a faster card will give more performance
- Combined with VBO’s the more frame buffer the more realtime performance with larger models

