



# AMD FirePro™ R5000

## REMOTE GRAPHICS

### AMD's Second Generation Enterprise PCoIP Remote Multi-display Solution.

#### Key Features:

- Single-slot form factor
- GPU with Graphics Core Next technology
- 2GB GDDR5 memory
- GeometryBoost technology
- AMD PowerTune technology
- Teradici Tera2240 host processor
- Compatible with PCoIP enabled thin/zero clients
- Two Mini DisplayPort outputs
- Support for DisplayPort 1.2
- One Ethernet port
- Active thermal solution
- 150W maximum power
- PCI Express® 3.0 compliant
- Designed, built and thoroughly tested by AMD
- Planned minimum three year lifecycle
- Limited three year warranty

AMD FirePro™ remote graphics are designed to deliver unparalleled 3D graphics, application performance and multi-monitor configurations over IP. Combining leading GPU technology from AMD with sophisticated transmission and compression capabilities from Teradici onto a single PCIe® card, AMD FirePro™ remote graphics enable a true PC experience on par with local desktop systems. This powerful combination helps to eliminate the latency and system bottlenecks that plagued the first remote graphics solutions.

AMD FirePro™ R5000 remote graphics is a flexible, manageable and secure solution for delivering full workstation computing experiences for professionals who work with multiple applications at once across multiple screens, and need more graphics performance to handle high resolution images, video, 3D modeling or animation applications. For IT managers looking to provide robust, secure and more manageable systems for employees working in engineering, design, animation, financial services or medical imaging, the AMD FirePro™ R5000 can meet these needs and more.

#### Uncompromised Quality of Graphics

Early remote graphics or thin client solutions weren't able to support 3D graphics or multimedia content and were not seen as truly viable solutions. As graphics processing technologies and Internet protocols improved, a robust thin client solution was no longer a pipe dream. PCoIP technology from Teradici uses advanced graphics compression algorithms and the latest optimizations in networking. A pixel stream is generated by the GPU and fed to the Tera2240 processor, which then compresses and encrypts all of the graphics, USB and audio streams. Sent over the IP



network to a PCoIP enabled device at the user's desk, the image is recreated with full graphics fidelity, USB and audio. Because only pixels are transmitted, it's significantly faster than moving large data files, models or video – resulting in minimal latency.

The AMD FirePro™ R5000 remote graphics card offers unmatched application responsiveness over IP for professionals working with complex models, large data sets, high resolution imagery or video. Featuring Teradici's most powerful next generation PCoIP host processor, the Tera2240, is capable of transmitting 300 megapixels per second, and can support up to four displays per user on a single IP network connection. The R5000 also includes 2GB of GDDR5 memory and a powerful mid-range GPU based on AMD's latest graphics architecture, Graphics Core Next, that's capable of processing up to 1.65 billion triangles per second. With the R5000, professionals can confidently work with graphics-rich content and multi-task across multiple applications with ease.

#### Streamlined System Management

While the AMD FirePro™ R5000 can deliver a full computing experience indistinguishable from a physical system, centralized deployment in the data center can benefit IT in many ways. By design, AMD FirePro™ R5000 remote graphics is an energy



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and space efficient solution. Unlike other remote graphics products, the R5000 eliminates out of chassis video cabling between GPU and the Tera2240 host processor, and can leverage existing IP networks, i.e. no infrastructure re-cabling is required. Further, unlike fiber optic solutions, with the R5000 end users are not required to sit within a specific distance from the host system. Because R5000 cards reside in the data center, fan noise and heat are eliminated from employee work areas, helping to reduce office cooling costs. For high density workspaces like trading floors, these noise, heat and cooling cost savings can be quite significant. The R5000 also features intelligent power saving and monitoring technologies, unique to AMD, that contribute to higher performance.

The AMD FirePro™ R5000 also supports full Wake-on-USB, and Wake-on-LAN that allows IT to wake up a system from a remote location, or power it down to conserve energy. IT administrators can also update device firmware from the data center, even when the remote workstations are in use, and remotely shut-down and restart when it's convenient for the end user. IT can also set up new employee workspaces or move existing employees more quickly. Once an R5000 is installed in the data center and is connected to a PCoIP enabled device at the user's desk, the PCoIP client doesn't need to be moved again. The employee just moves to the new location, enters their name and password and is up and running.

## Secure Computing

With AMD FirePro™ R5000 remote graphics, IT can provide additional security measures to protect corporate IP and sensitive data. With PCoIP technology, all transmissions are encrypted (support for 128-bit and 256-bit AES and NSA defined Suite B security protocols), USB devices are authenticated and restricted devices locked down. Corporate IP and sensitive data are safeguarded in the data center, intact and uncompromised. Only pixels are transmitted back and forth.

AMD FirePro™ technology is capable of meeting demanding centralized computing needs. Coupled with a single unified driver, AMD FirePro™ R5000 remote graphics can help IT administrators to centralize workstations in the data center, streamline system management and safeguard data while delivering uncompromised computing experiences.



FEATURES	BENEFITS
AMD's Graphics Core Next (GCN) Architecture	Balancing compute with 3D workloads efficiently
Flexible Display Output Options	<ul style="list-style-type: none"> <li>→ When combined with compatible PCoIP enabled zero client (e.g. Dell Wyse P45), capable of supporting up to four displays remotely (maximum resolution of 1920x1200).</li> <li>→ When combined with compatible PCoIP enabled client (e.g. Dell Wyse P25), capable of driving up to two displays (maximum resolution of 2560x1600).</li> </ul>
Local Monitoring	<ul style="list-style-type: none"> <li>→ Unlike other PCoIP enabled products, the R5000 features two Mini DisplayPort outputs for driving displays locally.</li> <li>→ Gives IT visual access to the user desktop for installing updates and trouble-shooting without physically being at the end-user location. No additional graphics card is required.</li> </ul>
GeometryBoost	<ul style="list-style-type: none"> <li>→ Utilizes the unique new hardware architecture that features dual graphics engines, allowing the GPU to process two primitives per clock cycle and provide ultra-high geometry processing performance.</li> <li>→ Allows users to unleash their creativity by ensuring ultra-high geometry performance and smooth handling of complex models.</li> </ul>
AMD PowerTune Technology	Dynamically optimizes the GPU clock, while keeping the workstation energy conscious, conserving electricity when it isn't needed.
Teradici Tera2240 Host Processor	<ul style="list-style-type: none"> <li>→ Designed and engineered to overcome remote computing challenges like poor responsiveness and lack of media or graphics support.</li> <li>→ Incorporates additional security measures designed to protect corporate IP and sensitive data. Data never leaves the data center, only pixels, and all transmissions are encrypted.</li> </ul>
Video Codec Engine (VCE)	Multi-stream hardware H.264 HD encoder results in power-efficient and quick video encoding.
Unified Driver	One driver spans the entire family of AMD FirePro™ technology, helping to simplify maintenance and system administration.

## Memory and Bandwidth

- 2GB GDDR5 memory
- 256-bit memory interface
- 102.4 GB/s memory bandwidth

## Output Connectivity

- Two Mini DisplayPort outputs for local displays
- One Ethernet port
- Remote display options are determined by required PCoIP thin/zero client device

## API and OS Support

- OpenGL 4.2
- OpenCL™ 1.2<sup>1</sup>
- DirectX® 11.1 (including DirectCompute)
- Windows 8, Windows® 7, Windows Vista® and Linux® (32-bit or 64-bit)

## Power Consumption and Form Factor

- 150W maximum power
- Single-slot, PCIe® x16 bus interface
- Full height / full length form factor

## System Requirements

- Single PCIe® x16 lane, 3.0 for optimal performance

- 2GB system memory
- Internet access for software installation
- Power supply and one 2x3 (6-pin) AUX power connector
- PCoIP-capable thin client device required for remote connectivity and display output
  - e.g. Dell Wyse P45 zero client for quad display output
  - e.g. Dell Wyse P25 zero client for dual display output
- Windows 8, Windows® 7, Windows Vista® and Linux® (32- and 64-bit)

## AMD Warranty and Support

- Three year limited product repair / replacement warranty
- Direct toll free phone and email access to dedicated workstation technical support team<sup>2</sup>
- Advanced parts replacement option

## Regulatory Compliance

- FCC, CE, C-Tick, BSMI, KCC, UL, VCCI, RoHS and WEEE

For more information, visit [www.amd.com/firepro](http://www.amd.com/firepro)

<sup>1</sup> OpenCL 1.2 conformance expected.

<sup>2</sup> Toll free available in the U.S. and Canada only, email access is global.

