SUPPORTING CLINICAL OUTCOMES FOR 11 YEARS

Display Controllers for Medical and Health Care Industries
Welcome

In today’s medical and health care industry, new digital technologies such as digital radiography, 3D, PACS, and remote graphics are helping to improve patient care and save lives.

To enhance current systems, multi-display solutions can help medical professionals work more efficiently by quickly viewing large amounts of information. This enables them to diagnose patients accurately and prescribe treatment soon after an examination.

AMD has a full range of high resolution, high bit depth, multi-display solutions that are designed to help medical administrators streamline their work environments, adopt new, leading-edge technologies to improve patient treatment throughout and achieve a high standard of care.

AMD FirePro™ 3D Workstation Graphics

(MRI Review, Volumetric rendering and CT scans)

High performing graphics, optimised for 3D content. A continuing growing trend in medical imagery is the practice of 3D modeling, integrating several individual MRI or CT scans and combining them to create a 3D representation. This type of rendering, known as volumetric rendering, helps radiologists to spot anomalies within the patient’s examination in a more natural view. Many of today’s medical graphics solutions have little or no 3D accelerated graphical ability. AMD FirePro™ workstation graphics are designed specifically for 3D applications to improve the speed and clarity of a rendered image.

AMD Eyefinity technology. A powerful multi-display technology that supports up to six high definition displays from just a single graphics card. This technology enables medical professionals to efficiently diagnose patients by viewing several sets of information across multiple screens without application switching and window-sorting.

Grayscale. AMD FirePro™ graphics enables high quality, high resolution 10-bit grayscale 2D output for medical imaging professionals, providing 1,024 shades of grey, while delivering high performance 3D acceleration. These enhanced visual capabilities are enabled by one AMD FirePro™ graphics card, minimizing cost and complexity while enabling radiology professionals and doctors to make highly accurate diagnoses.

High bit depth support (10-bit). In order to benefit from the increased bit depth of medical display devices, the graphics cards which are used to drive them should be capable of outputting higher bit depth information. Conventional display devices use 8-bits per colour channel (over 16 million colours). While this sounds substantial, this is but a fraction of the colours we actually perceive (Appendix A).

Investment protection. Extending prior DVI display investments, AMD FirePro™ W5000 DVI professional graphics can drive two large dual-DVI, 5 megapixel displays, enabling an amazing clarity when viewing images, scans and data. The broad, feature-rich range of AMD FirePro™ graphics cards in half and full-height configurations means there is no need to replace existing hardware. All AMD FirePro™ technology is designed and thoroughly tested by AMD for outstanding reliability and performance. This is why every AMD FirePro™ graphics card has a limited three year warranty and planned minimum four year lifecycle.

Finally, every AMD FirePro™ workstation graphics card comes with the highest levels of customer support. Customers have the ability to contact the AMD technical team directly to help in any matters regarding their graphics hardware.

Appendix A: A visual representation of the difference between 8-bit and 10-bit support.
**AMD FirePro™ Remote Graphics**

*Digital Radiography Review, PACS*

With the use of PACS (Picture Archiving and Communication System) many medical institutions are benefiting from access to central archived patient data. However, with concerns regarding security and access to patient data, one solution is to make the information provided by PACS available via remote graphics.

**Improved access to patient data.** The AMD FirePro™ R5000 remote graphics solution enables the user to access and view data from PACS, via an IP network, without the need to download it locally. The ability to view 2D, video and 3D content remotely has many advantages including reduced data storage costs and improved security.

**Multi-display support.** The AMD FirePro™ R5000 remote graphics provides support for two remote displays (max resolution of 2560x1600) or up to four remote displays (max resolution of 1920x1200). To remote displays, a zero client featuring PCoIP technology from Teradici is required.

**Improved security, minimal costs.** With an integrated graphics card that includes lossless display compression and IP transmission, AMD FirePro™ R5000 sends data through a regular IP network to a remote thin client device. This helps improve network security and minimize power and capital costs.

This system can support a host of PC requirements, like:

- PACS Diagnostic workstations
- PACS Referral workstations
- PACS Clinical workstations
- PACS Remote Hospital workstations

**Easy integration.** The low profile, half-height design means these graphics cards can easily be integrated into existing systems, for a cost effective way to make multi-display technology available to staff.

**Multi-display support.** Multi-display solutions give medical professionals the ability to review a patient’s information and images simultaneously, or to view several large scans at once, helping medical staff to diagnose efficiency and accurately.

**Energy efficient.** Most AMD FirePro™ multi-view graphics cards utilize passive cooling, a very quiet and energy efficient system. As a result, the expected consumption rate of AMD’s passively cooled graphics cards consume less power, minimizing heat and energy costs.

**AMD FirePro™ Technology: Flexible Medical Solution**

AMD FirePro™ graphics cards can be integrated into existing hardware and greatly improve productivity. Below are just some examples of how a typical medical center can utilize AMD FirePro™ technology.

- ATI FirePro™ 2460 supports up to four displays
- AMD FirePro™ 2270 professional graphics supports all major display standards - DisplayPort*, DVI and VGA

*DisplayPort adapter sold separately*
A high performing professional 3D graphics card with superb visual quality and power.

**PRODUCT PORTFOLIO**

**AMD FIREPRO™ V9900**

- Entry Level
- A dual output, professional 3D graphics card in a small form factor for maximum flexibility in system installation.

**AMD FIREPRO™ V4900**

- Entry Level
- A professional 3D graphics card with 1GB of blazing-fast GDDR5 memory and multi-display capabilities to aid in improved workflow productivity.

**AMD FIREPRO™ W5000**

- Mid Range
- For medical professionals who work on complex 3D models and need expansive visual desktop work space, all from a single-slot graphics solution.

**AMD FIREPRO™ W7000**

- High End
- With the ability to meet the demands of highly complex data sets and 3D model reconstruction, this GPU will significantly enhance the ability and performance of the system hardware it's assigned to.

**AMD FIREPRO™ W9000**

- Ultra High End
- A professional 3D graphics solution designed to process highly complex data sets from superior image rendering to 3D image reconstruction.

**AMD FIREPRO™ W6000**

- High Display Density
- Purpose built to drive up to six high resolution displays or projectors.

**AMD FIREPRO™ W5000 DVI**

- Medical Imaging
- Perfect built to drive two dual link DVI high resolution medical imaging displays.

**AMD FIREPRO™ R5000**

- Remote Workstation
- For organizations that want to remote the compute and graphics experience for their workstation and desktop users.

**AMD FIREPRO™ 2270**

- Designed to help IT more easily configure and display dual displays for clinical, diagnostic and referral workstations within a healthcare organization.

**ATI FIREPRO™ 2460**

- Designed for health care professionals to view large amounts of data and imagery across multiple displays.
1. 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.

2. 30-bit monitor required for full 30-bit display (10-bit per RGB component). AMD FirePro™ 3D graphics cards can display over one billion colors when attached to 30-bit displays.

3. PCoIP portal required, sold separately.

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