

InfiMed Cardiac Systems Rely on AMCC's RAID Controllers for Fast, Reliable, and Accurate Cardiac Diagnostics

Since 1983, Liverpool, New York-based, InfiMed, Inc. has driven the transition to digital imaging technology in routine and emergency treatments for cardiac events worldwide. Its PlatinumOne™ cardiac systems provide advanced digital X-ray solutions that facilitate accurate diagnosis and rapid response in emergency situations as well as detailed tracking during operations. InfiMed's digital systems permit conversion at hospitals and clinics from standard analog film x-ray to digital systems without the expense of replacing or redesigning in-place lab equipment. InfiMed relies on the information stored and served by AMCC Serial ATA RAID controllers for speed, reliability and flexibility.

"During an emergency cardiac event you don't have time to back up and do it over.

When a patient is in critical condition, you only have one shot. Digital cardiac imaging gives on-scene personnel immediate access to a much deeper level of information, enabling better patient care and treatment."

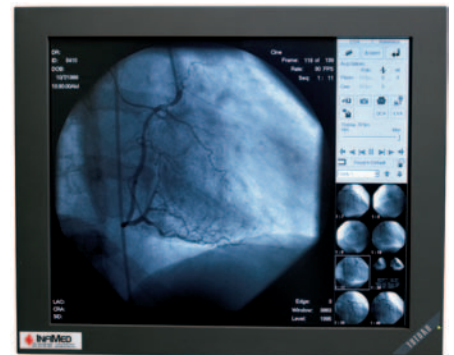
— Rob Geiger,
Program Manager, InfiMed

Time is of the essence in diagnosing cardiac events. Information needs to be acquired, stored, and examined on-site or transmitted to a remote location quickly, reliably and without error. InfiMed cardiac systems rely on AMCC 3ware ATA RAID controllers to help get the job done.

InfiMed markets a turnkey solution for OEMs that distribute and install cardiac imaging systems worldwide. The company's digital systems offer universal connectivity with all major manufacturers of cath lab equipment.

With speed in excess of 400 MB/sec sequential RAID 5 reads and over 110 MB/sec RAID 5 sequential writes — as well as the security of a true hardware RAID architecture — AMCC's 3ware RAID controllers enable a completely new class of SATA RAID storage solutions.

Hospitals and clinics realize significant savings on both cost and time spent upgrading or modifying their existing equipment and laboratories. More importantly to patients, InfiMed systems provide medical personnel with continuous, real-time access to data, whether they are standing in the operating room, monitoring from down the hall, or consulting from across town or the other side of the world.



Because of such benefits, OEMs, hospitals and clinics — InfiMed's customers — use the PlatinumOne Cardiac system for new cath lab suites and are increasingly converting or upgrading their analog-based systems to digital. InfiMed's DICOM 3.0 compatible cardiac systems provide a flexible communications protocol for image distribution as the overall industry migrates to a filmless environment.

The Data-Management Challenge: Find a Fast, Accurate, Cost Effective, and Dependable Solution

In designing its latest generation of digital x-ray imaging systems, InfiMed's design team specified a solution that would run a 1 KB by 1 KB image, twelve bytes deep, at 30 frames per second. That translates to about 66 MB/sec of sustained throughput. In terms of bandwidth, such a system demands a minimum of 100 MB/sec sustained write speed to acquire/store digital data and provide immediate review capabilities.

PlatinumOne

The PlatinumOne Cardiac system offers more clinically advanced features for higher productivity and better patient care, with the added benefit of lower radiation dose.

Advanced Functionality

- Left Ventricular Analysis (LVA) and Quantitative Coronary Analysis (QCA) which allow results to be saved as photo files
- Customizable doctor preferences allow clinicians to select their own settings for Cine/Spot/Fluoro acquisition and review
- Thumbnail displays on the main screen allow image sequences to be selected for review by a single mouse click
- A clinically intuitive user interface

Universal Interface

- Multi-brand generator interface compatible with most x-ray equipment

Automation

- Multi-tasking operation and Automated Image Optimization provide maximum diagnostic efficiency and quality

“Data throughput to the bus on our systems is huge and comes in at very high sustained rates, for example acquiring live patient images and transmitting them in real time during a cardiac catheterization procedure. Timing is very critical and so is the ability to play back and review data on demand. Our ultimate responsibility is to the person undergoing surgery, and you can’t afford to base your abilities on an unreliable system.”

— Rob Geiger

Program Manager, InfiMed

The data-handling capacity required by such a system is enormous. Meeting that need is complicated by the requirement for utter reliability. Life-or-death situations do not wait until a technician arrives to kick a console, reroute a wire or replace a failing storage device.

InfiMed decided to use full RAID 10 because it would make for a safer and more redundant product over RAID 5. They were ready to design their own RAID 10 data storage controller, considering it unlikely that any off-the-shelf controller could meet their demanding specs without breaking a hospital’s available budget for equipment upgrades. Still, a commercially available controller would reduce their development costs and speed time to market, so they tested various commercial RAID systems for compliance.

AMCC Joins the Medical Team

AMCC’s 3ware RAID controllers met or exceeded all specified requirements for the advanced systems and provided all the data throughput, storage reliability and system redundancy needed in such a mission-critical system without breaking budgets. Its industry-standard design made incorporation and maintenance extremely economical in field service situations, while providing the data throughput, storage reliability and system redundancy needed for a mission-critical system.

About 3000 InfiMed cardiac units with 3ware RAID ATA controllers have now been distributed worldwide and the number increases daily.

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Sales Offices for 3ware Products:

USA: +1-877-883-9273
+1-408-523-1000
Europe: +00-800-3927-3000
Asia/Pacific: +65-6826-3381
Japan: +81-3-6717-4458

3waresales@amcc.com
www.3ware.com
www.amcc.com