

Application Note – Healthcare and Medical Imaging



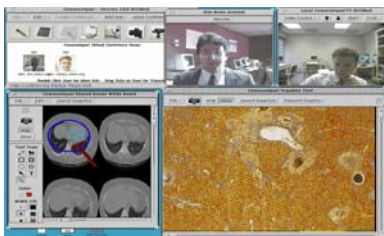
Free-Space Optics has proven to be the most practical and economical way to build or enhance any communications network, saving millions of dollars and thousands of headaches. This is especially important in medical and health care applications, where more than just headaches are at stake, and having a flexible and capable network in place can be a matter of life and death.

Connecting Each Person to the Medical World

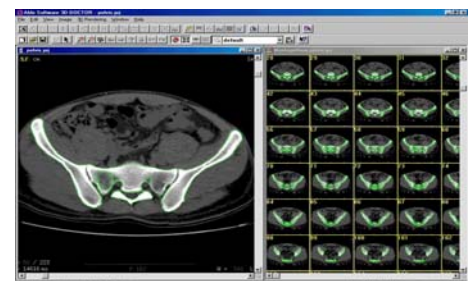
From digital monitoring to new pharmaceuticals to revolutionary surgical techniques, the range of health care possibilities available to each patient is unprecedented. But how available is this technology really? As equipment and procedures become more sophisticated, they require more and more information, and they require this information faster. It is not enough that the technology exists, it must be present on demand, when and where it is needed. For a patient suffering in Los Angeles, the fact that there is a solution in New York provides little consolation.

fSONA's SONAbeam™ technology bridges the gap between patient and solution. It provides high-reliability and high-capacity connectivity between hospital campuses or different parts of a campus, at data rates ranging from 1.5Mbps to 1.25Gbps. On its own or as an overlay network to complement an existing infrastructure, the SONAbeam's high link margin and carrier-class quality provides performance you can count on. For less money and in less time than ever before, bandwidth-intensive applications can be implemented across the globe, and brought directly to a patient's bedside.

- **Telemedicine** – providing real-time clinical care at a distance, supporting emergency as well as routine medical care
- **Telehealth** – supporting healthcare services around the world
- **Records Storage** – supporting patient diagnostics, hospital management, and medical research



Collaborative Computing: 40Mbps for video, image & application sharing



MRI Image: 100Mbytes for a 512x512x16 image

- **Medical Education & Training** – enabling real-time collaboration, virtual labs, & distance learning
- **Grid Computing** – providing complex modeling and computer-intensive solutions to each individual patient.

The SONAbeam™ Solution

Campus LAN Connectivity

- **High-bandwidth capability**
up to 1.25Gbps of real throughput enables all telehealth and telemedicine applications
- **No EMI**
no danger of interference with other hospital equipment or communications
- **Rapid Deployment/Redeployment**
responds quickly and cost-effectively to changing conditions, including emergency and disaster recovery situations
- **Near-zero latency**
use resources collaboratively and in real-time.

"Last Mile" Network Connectivity

- **High-capacity data pipe**
allows for high-bandwidth applications throughout the campus
- **No digging or physical disruption involved**
significantly reduces capital expenditures
- **No real estate or zoning approvals required**
significantly reduces waiting and lead times
- **No leased line or spectrum license fees**
significantly reduces operating expenditures
- **High availability**
highest link margin in the industry ensures that the link is always up and running

Problem-Free Transmission

- **High Security**
ultra-narrow beamwidth makes it virtually impossible to intercept data without physically being in the line of sight transmission path, maintaining HIPAA compliance throughout the network.
- **Fully eye-safe**
no health risk or liability



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