



## The Force of Quadrant Magnetics Apparent in Everyday Life

**Hodgenville, KY-** Magnets are everywhere: automobiles, computers, security and medical devices just to name a few - serving both the industrial and consumer market. Magnets are incorporated into many of the products we use. The physics of magnets powers everything from motors to MRI.

Quadrant Magnetics of Larue County is a company dedicated to the unique qualities of permanent magnetic material. From concept to production – Quadrant Magnetics provides customers solutions with knowledge and technology. General Manager, Scott Tubbs, said that “Quadrant aids and assist its customers through design assistance through manufacturing and optimization.

“Since we specialize in most permanent magnet materials, customers have come to rely on our expertise, manufacturing and logistic services. Quadrant is contracted by customers that use thousands of magnets a day to companies that use hundreds a week tailored to individual budgets.”

The physics of magnets is fundamental to Quadrant’s work. Engineers must deal with “a host of variables involved in magnetic design and production, including operating temperatures, environmental factors, demagnetizing effects and space consideration,” according to the company website. By understanding the magnetic nature of a material and the needs of the customer, engineers are able to develop a custom magnet for the specified need.

The technology of Quadrant Magnetics is crucial to producing the required product. The engineering of permanent magnetic materials brings theory to concepts with computer assistance. Engineers use Auto CAD (computer aided design) and Finite Element Analysis (FEA) to create 3-dimensional images and simulations.

With Finite Element Analysis Software, engineers are able “to differentiate between different materials within the image,” Tubbs said. FEA allows for a cost-efficient analysis without actually manufacturing the product. The margin of error is significantly reduced with the application of this technology.

The concept is then transferring the information to CNC (computer numerically controlled) Machinery by a data medium - such as a smart card or disk. CNC Machinery speeds manufacturing within the plant and also allows images to be manufactured at the Quadrant Technology plant in California.

Materials are geometrically processed in numerous ways, beginning with pressing, followed by cutting, slicing or grinding, all of which result in a unique custom magnet. Certain metals can enhance or modify magnets, which increase the magnetic field. For example, a ceramic magnet’s magnetic force is intensified by up to four times when it is sandwiched between steel plates. Therefore, assembly is important to the integrity of the product.

Quadrant Magnetics also uses high-speed Internet technology in order to stay connected with its California plant. Seventy-five percent of the company’s communication is done electronically. “The wireless office network also allows us to share designs and other information with other offices,” Tubbs said. The simplification of communication ensures cohesiveness among the satellite offices and regional sales people.

The Hodgenville Plant also has the physical convenience of being within seventy-five percent of its customer base. The convenient location gives customers added confidence.” Being in close proximity to our growing customer base is key to our success,” Tubbs said. This global company has found a perfect home in central Kentucky.

### About KY 120:

In the fast-paced world of technology-driven business, it should be recognized that best practices can be studied and emulated. As a part of the [connectkentucky](http://www.connectkentucky.org) initiative, CiTE (Center for Technology Enterprise) is profiling business initiatives in each of Kentucky’s 120 counties. For more information visit our Web site at [www.connectkentucky.org](http://www.connectkentucky.org) or call 270.781.4320.

**Name:**  
Quadrant Magnetics, LLC

**Internet:**  
[www.quadrantmagnetics.com](http://www.quadrantmagnetics.com)

**Products/Services:**  
Custom magnetic design,  
manufacture and distribution

**Location:**  
Hodgenville/Larue County

**Leadership:**  
Scott Tubbs, General Manager

**Employees:** 6

**Founded:** 2000

**Reach:** International

**Innovative Insight:** *“From the days of manpower to the sophisticated technology of today -FEA allows us to model products and reduce the margin of error.”*

**Way Internet Has Made You More Competitive:** *“Our Wireless office connection allows us to share information with other regional offices easily and efficiently.”*

**Advice to Growing Companies:** *“It is necessary to re-invent yourself in order to keep up with the technology of today.”*

**Ways to Continue to Attract the Best Workers:** *“Central Kentucky supplies a valuable resource of employees. We provide competitive compensation and great benefits.”*