finger lakes engineering

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FLE Awarded FastTrack50 Recognition

Finger Lakes Engineering has been recognized as one of the 50 fastest growing companies for 2005 by the Central Business Journal and FastTrack committees of New York State.

The FastTrack 50 program collects information about company's staff levels, gross revenue, and sales efforts over a period of 3-5 years.

The FastTrack 50 divides its list into two parts consisting of companies with greater than $10M per year in sales and those with less than $10M per year in sales revenue. Each company's position on the list is determined by considering not only sales revenue but employment and revenue growth.

Finger Lakes Engineering has been recognized as #9 out of the top #25 companies with sales revenue of less than $10Millon year. FLE joins the FastTrack list along with other leading groups such as Advanced Design Consulting, Gene Network Services, and Spectrum Software.

Topping the list for the firms with greater than $10M per year was ABC Refrigeration along with several other technology companies such as Sensis Corp, InfiMed, and PAR Technology.

Finger Lakes Engineering is planning for continued growth over the next 2 years as the firm continues to assist new clients developing high performance microprocessor and FPGA based computational systems.

FLE is will be commercializing a series of intellectual property cores and reference designs, throughout 2006, to allow other companies to "design-in" and ship products using FLE's proven technology for both FPGAs and microprocessor operating systems.

For more information on Finger Lakes Engineering, our upcoming products, or additional questions, please feel free to contact us.

For information on qualifying your company for the FastTrack50 in 2006, please contact the Central New York Business Journal.

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Processors, FPGAs, and Saving $$$ Part #1

By Steve Spano, President and Principal Consultant

How Do We Know When We Are Successful?

When an engineer begins to create a design for a processing system, a series of problems must be understood and systematically solved in order to have a successful design and most importantly a successful product. A successful design could be the "Fastest" processor with the "Fastest" signals. A successful design could also be one that doesn't use the latest-and-greatest technology; but works and meets the requirements for the company. Successful designs can be defined many different ways in engineering-land. However, a successful product is always defined as being able to be sold at a higher price than it costs to manufacture it thus making a profit on every unit shipped. Sometimes the "successful" engineering design doesn't always make for a "successful" product. Let's talk about how to make sure we get both.

Understanding The Problem

When designing a product that is supposed to take some input data and generate some output, it is very important to understand how fast the incoming data is flowing, what algorithms must be executed, and how fast the resultant data must be presented. If you don't understand these three points, you may not be able to achieve a successful design let alone a successful product.

Once you understand the input, output, and processing data rates, you can properly select a processing technology. The technology choice will always be constrained by at least some of these factors: speed, cost, size, power, and cooling. If you are lucky and cost isn't a factor, then an engineer can design in the fastest processor they can grab and usually the design will work with some minimal upfront analysis to define the data rates. In most cases, companies care about the cost content of their products and try to minimize it.

The Traditional Approach

A traditional processor, or even a high performance Pentium processor, can only really perform 3 or 4 instruction cycles at once. Processors are single minded entities performing one operation at a time. The magic of software makes the processors appear to do many things at once. While this may be OK for running Word and Outlook on your desktop, it may not work at all if you are trying to read the ignition timing states on your car's engine to determine the next ignition timing cycle of the engine. When embedding a processor within product, operations are usually intended to occur in real-time. If they don't occur in real-time; then something bad happens; like your car stalling out or loss-of-data.

The Traditional Problems

Executing operations in real-time can be accomplished using a traditional processor architecture as long as the operations are not "too fast" or there are not "too many" input data streams. If you have one processor and one data stream then a reasonable design approach should be successful. However, what if there are 2 inputs, or 5 inputs, or 100 inputs? The single processor approach just may not have enough time to check all the inputs, perform all the calculations and update all of the outputs to keep the data flowing properly. In this case, design options could add more processors; but then the multi-processor architecture needs to share data somehow which continues to add cost and complexity.

The Solution To The Traditional Problems

When faced with many inputs, or inputs that are too fast, for a single processor to perform, FPGA devices can be the ideal solution. An FPGA device is capable of performing data operations completely in parallel. A properly designed FPGA device is capable of reading and executing on 5 or 100 inputs in parallel and at the same time. This true 'parallel processing' is a tremendous engineering and cost savings improvement. Typically, an FPGA can be designed to perform more functions than its microprocessor counterpart; yet the FPGA can accomplish this at a lower-clock rate. Lower clock rates in a properly designed FPGA can mean lower cost, lower power dissipation, and a smaller product that has more performance than a higher cost, higher power, and larger microprocessor based product.

In part #2 of this series, we will investigate the FPGA based solution and show how lower clock speeds can be a very good thing to improve your company's margins, reduce complexity, and be successful.

POINT TO REMEMBER: LOWER CLOCK SPEED = LOWER COST

Finger Lakes Engineering: Vision, Mission, Values

Vision: To be the first choice engineering service provider for the most innovative companies in the world, to provide an ethical and flexible work environment for our staff, and to continually invest in our community.

Mission: To develop relationships with companies who use electronics technology and help them achieve a superior marketplace advantage by providing complete hardware design services from concept through production on a fixed cost quote.

Values:

- Treating each client as if they are our most important customer
- Open and timely communications with our clients and employees
- Maintaining the confidentiality and security of client information
- Treating our employees with fairness, respect, and accountability
- Continued business growth through reinvestment of profits

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Each copy of inPhase will now alternate between business news, client profiles, technical articles, and new innovations!

Our next newsletter will feature an FLE client and their new products.

Stay tuned for Part#2 of the series "Processors, FPGAs, and Saving $$$"