

Spring 2005



VIEWPOINT SYSTEMS, INC.

Viewpoint News

Viewpoint Custom Circuit Designs Solve Difficult Customer Problems

Viewpoint is nationally recognized as a leader in delivering cost-effective custom software with off-the-shelf hardware that work reliably and efficiently. The broad range of experience of Viewpoint's engineering staff means that we have personnel capable of solving a huge range of problems. Sometimes however, we are presented with a problem where no off-the-shelf hardware will do the job. This is where our experience in circuit design and circuit board manufacturing has saved the day on many occasions. "Many of our customers are unaware that we have circuit design capabilities in house" said Carl Kosmerl, Viewpoint's senior circuit designer.

Viewpoint has successfully designed, manufactured, and delivered custom circuits that solve everything from the very simple to the extremely complex. Some examples include:

- Simple interconnection interface circuits
- Specialized analog filtering circuits
- Isolation and voltage level interfacing
- PIC and embedded microcontroller circuits
- Full-function PCI and PXI computer boards
- Battery operated circuits

Kosmerl said, "We're good at creating some pretty high-power

software. But sometimes it makes more sense economically and for performance reasons, to implement part of the overall solution with a custom hardware circuit." Kosmerl gave an example where the customer needed many channels of low noise, RTD temperature measurements. "By creating a custom board where

multiple RTD measurements were acquired, linearized and output as a simple CAN message, we not only improved the accuracy and noise immunity of the measurements but significantly reduced the total system cost for our customer.

The off-the-shelf hardware solution was physically large and expensive, costing as much as 200% more

than the custom solution. It required much more cabling and couldn't provide the Kelvin sensing required for the high accuracy measurements needed. Software would have been required to linearize each of the many inputs and would have slowed the overall system response significantly. The custom hardware solution did the linearization in hardware, not slowing the total channel scan rate down at all. One feature the customer liked the most was the output of all the digitized temperatures onto the CAN bus. This enabled the customer to locate the hardware close to their temperature measurements reducing the noise on the system because the signal (temperatures) were transmitted over the longer distance on the CAN bus as a digital signal not subject to the noise in the environment."



Complex circuit design was used to create Viewpoint's popular DIO64 boards

(Continued on page 3)

National Instruments Training

All classes listed below are held at Viewpoint's Certified Training Center in Rochester. To register go to www.ni.com/training or call 585-475-9555. For detailed course descriptions, prerequisites and a complete schedule, go to www.viewpointUSA.com/training.



LabVIEW Basics I: Introduction

6/13, 7/18, 9/2 3 days

Covers the fundamentals of LabVIEW programming and constructing simple VIs, building applications involving data acquisition, analysis, and user interface.

\$1595

LabVIEW Basics II: Development

6/16, 7/21, 9/15 2 days

Prepares you to design complete, stand-alone applications in LabVIEW and is a logical extension of the LabVIEW Basics I course, aimed at making you successful in creating applications for research, engineering, and testing environments. Covers proper design techniques, implementation of complete LabVIEW solutions, DataSocket technology, advanced file I/O, networked environments, and error handling. **

\$1095*

LabVIEW Intermediate I: Successful Development Practices

8/22 3 days

Teaches you structured practices to design, develop, test, and deploy LabVIEW applications. Analyze your application requirements, choose the correct design pattern and data structures for your application, and quickly test your design. **

\$1595

LabVIEW Intermediate II: Performance and Connectivity

8/25 2 days

Teaches you memory management and performance-enhancing techniques to maximize application performance. Extend application functionality by leveraging other applications using DLLs, Active X and the Internet. **

\$1095*

Data Acquisition and Signal Conditioning

9/19 3 days

Using LabVIEW, plug-in data acquisition (DAQ) boards, and SCXI signal conditioning hardware, the Data Acquisition and Signal Conditioning course teaches you the fundamentals of PC-based data acquisition and signal conditioning. Get hands-on experience installing and configuring data acquisition hardware and learn to use data acquisition software functions to build your application. **

\$1595

TestStand I: Introduction

9/26 3 days

Use features provided in the TestStand environment and learn the basics of customizing. Upon completion, develop test applications using built-in tools supplied with TestStand. **

\$1795

TestStand II: Customization

9/29 2 days

Customize the functionality built into TestStand. Multithreading and multi-UUT testing, advanced reporting techniques, and application program interface (API). Concludes with system design projects. **

\$1195*

Interested in a course that isn't listed? Need to learn [LabVIEW Machine Vision](#) or [Motion Control Fundamentals](#)? Check the website or call Carol Scheuer at 475-9555 to have a class scheduled or for further information and to sign up!

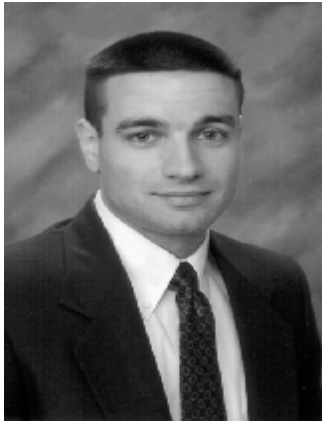
* 25% discount if scheduled concurrently with Course I

** Indicates prerequisite required

TestStand Certified Developer Designation Awarded!

Viewpoint is proud to announce that Brian Lander has earned the National Instruments Certified TestStand Developer designation. To become certified, Brian was required to show proficiency in developing test sequences including customization of test systems, expert knowledge of the components of the TestStand architecture and customizations that can be implemented in TestStand., as well as a good working knowledge of LabVIEW.

Brian, a Senior Systems Engineer, is also one of Viewpoint's 14 Certified LabVIEW Developers and 8 Certified Professional Instructors.



Brian Lander, Systems Engineer

Viewpoint is committed to providing our customers with high quality engineers, who are experts in their fields. National Instruments certification programs highlight our dedication to giving our engineers a cutting edge in designing systems that work for our customers.

Brian will be using his expertise to teach courses in TestStand in September.

Congratulations, Brian!

For a detailed description of TestStand courses and to sign up go to www.ViewpointUSA.com/training.

Custom Circuit Design

(Continued from page 1)

Another major circuit development effort was providing high isolation to many channels with high common mode signals. The customer needed to measure small AC voltages and could not find hardware that didn't take up the whole test stand to measure the 500 or so channels. We provided custom circuitry that not only measured AC signals down in the uVolt range but also provided the programmable hardware filtering to only measure the RMS value of the ac signal frequency of interest, giving much more accurate measurements

than standard off-the-shelf products. Again using a CAN bus interface to output the data we reduced **noise and cost** for the system significantly.

Viewpoint's most ambitious circuit design to date is the DIO-64 Intelligent Event Controller/Analyzer board. This board is an extremely high-powered digital I/O board that uses an on-board FPGA to treat and analyze digital data as time-stamped events in real-time.

Viewpoint Participates in Fuel Cell Development

General Motors Corp. in Honeoye Falls has begun building a fleet of 40 hydrogen fuel cell vehicles as part of the U.S. Department of Energy's *Controlled Hydrogen Fleet and Infrastructure Demonstration and Validation Project*.

General Motors is collaborating with a number of organizations in order to complete this 5 year project. Viewpoint Systems has been chosen to help General Motors to remotely collect and analyze performance data on the vehicles over the life of the project.

David Smith, Viewpoint Partner and manager of this fuel

cell project said, "Viewpoint's years of experience in fuel cell monitoring systems will be an important factor in being able to provide the DOE (Department of Energy) with the performance data needed to make hydrogen fuel cells the energy source for vehicles in the future."

Additional information can be found at:

http://www.eere.energy.gov/hydrogenandfuelcells/2003_solicitation_notice.html and http://www.gm.com/company/gmability/adv_tech/100_news/doe_033005.html.



VIEWPOINT SYSTEMS, INC.

800 West Metro Parkway
Rochester, NY 14623

Phone: 585-475-9555
Fax: 585-475-9645
Email: info@viewpointusa.com

*Engineered To Work.
Designed to be Right.*

www.ViewpointUSA.com

Viewpoint Systems is a highly experienced systems integrator dedicated to delivering high-quality, custom solutions in manufacturing test, processing monitoring, product development, industrial automation, and project management.

Viewpoint's add-on products for LabVIEW make your job easier!

DIO64-PCI/PXI Versions 64 Channel intelligent high-speed Digital I/O

MultiCom - Access up to 64 serial ports from LabVIEW for Windows

ViewPort - LCD & VFD Displays for LabVIEW Real-Time Systems

Peek/Poke -Memory and I/O access from LabVIEW

Opto32-128 -Low Input Current SCXI opto-isolated digital input board

DIO-128 - 128 channel high speed digital I/O

6K VI Motion Library - Active X Library for Compumotor 6k Controller
