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## Behind the boom in PXI (*continued*)

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### **Q: What were some of your important PXI introductions at Autotestcon?**

**A:** We introduced a new family of high-speed digital test products called the 5290. It features 32 channels per board, 256 Mbytes of onboard memory and per-pin and per-vector-direction programmability. This product targets test applications with multiple analog-to-digital converters (ADCs) or digital-to-analog converters (DACs), such as phased arrays in military and commercial avionics equipment. It also is a very cost-effective solution in the semiconductor test field, where engineers need to test FPGAs before they go into an assembly.

Another important product introduction was a 3-GHz RF signal analyzer, developed by ZTEC. Targeted for the cellular, WLAN, and radar industry, it's a 3U, single-slot, PXI instrument that measures both power and pulse power.

We also introduced a static digital I/O product, as well as the newest generation of our ATEasy test-development software—version 6.0. Finally, we completed the transition of all our chassis mainframes to incorporate smart features, which allow you to check temperature inside the unit on a per-slot basis, monitor power supplies, and control the mapping of the triggers from segment to segment.

### **Q: What is your approach to making your products more user**



**Loofie Gutterman**  
President  
Geotest—Marvin Test  
Systems  
Irvine, CA

Co-founder of Geotest—Marvin Test Systems, Loofie Gutterman has more than 20 years of experience in the test and measurement industry. During his tenure with the company, he has served as VP of systems engineering, COO, and now president. His experience in the

## friendly?

**A:** Our ATEasy software is a big part of it. It's a rapid application-development framework for functional test, ATE, data-acquisition, process-control, and instrumentation systems. ATEasy provides the tools to develop and maintain software, ranging from instrument drivers to complex test programs.

Beyond software, our instruments feature a user interface that makes it easy for engineers to make sure that the equipment is operating properly. A big focus for us is to ensure that our hardware is user friendly, regardless of whose software you use. We also have an in-house system-integration department that provides our own development engineers with feedback regarding usability and features.

### **Q: Can you give an example of a typical turnkey solution?**

**A:** There are lots of them, and they can range from a tester for a target-acquisition and fire-control system on a helicopter to a tester for microprocessor boards that go on locomotives. Typical building blocks might include: a PC-based controller, a chassis, switching, analog stimulus and measurements, power supplies, and software. And you might need a digitizer or scope, depending on the application.

### **Q: To what extent are test engineers using network-based solutions to conduct and manage tests?**

**A:** Many engineers who do production test have been tied into networks for years. Most production testers do datalogging, especially in mission-critical applications, such as pacemakers, or in the military or automotive markets, where you must be able to trace the history of how parts were built and tested.

Automotive airbag sensors are a good example. This data gets sent to a central database in your factory. So, the idea of networks in the test arena has been around a long time—certainly in the back end.

On the front end, you are hearing a lot more talk about distributed testing through the Ethernet and LXI, which are replacing GPIB as the control interface for instrumentation. But this is just emerging. Certainly, distributed testing can be a great help on the development side.

In our own operation, we have test engineers working on the second floor and running and monitoring test equipment in our systems integration lab on the first floor. In some industries, however, the potential for networked test is limited for proprietary or security reasons. For example, we would like to do more networked control of military flight-line testers, but security concerns make that difficult.

development of commercial and military test instruments, as well as turnkey solutions, paved the way for Geotest's growth in the PC- and PXI-based product markets. Prior to joining Geotest, Gutterman held several positions with test-systems manufacturer RSi, including program manager, COO, and technical director. He currently serves as the president of the PXI Systems Alliance.

Contributing editor Larry Maloney recently interviewed Gutterman by phone on developments in PXI and other test-industry trends.

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**Q: What market areas still remain a stronghold for VXI?**

**A:** In some parts of the military/aerospace market, you have not only old VXI equipment operating, but also established test programs that have not changed for many years. An example is Lockheed Martin's VXI-based LM-Star avionics tester for the F16. This test equipment is about seven or eight years old, but you won't likely see a change. Such legacy systems will stay with VXI, but when it comes to selecting test systems for new applications, the clear choice is PXI, even for military/aerospace. Very few new VXI products are being introduced, so you don't have the state-of-the-art instruments in that area anymore.

**Q: Despite its growth, do you still need to educate engineers on PXI?**

**A:** Yes. At the recent PXI Technology and Applications Conferences that were conducted at various locations throughout North America, we were surprised at the number of engineers who wanted to learn about PXI versus those who already knew about the technology and were curious about new products. Unlike a lot of products in electronics, test systems tend to hang around a long time.

Now we are seeing a new surge of interest in PXI as engineers replace older test equipment. Many engineers can't get their legacy VXI equipment serviced anymore or are dealing with vendors that no longer produce the equipment. So, they are now just beginning the process of converting to PXI platform.

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