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## Automation Control's Motion Control Expertise Helps IDE Reduce Plantronics Test System Setup Time by 95 Percent

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### ***New Flex Test Systems Improve Productivity, Accuracy and Configurability; Omron Touch Panel Facilitates Operator Interface***

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In 1969, the historic first words from the moon – ***“That’s one small step for man, one giant leap for mankind”*** – were transmitted over a Plantronics, Inc. headset. Today, the company is the world’s leading headset manufacturer, supplying headsets for mission-critical air traffic control, telephones, laptops, and more. Plantronics routinely relies on IDE, Inc., a Scotts Valley, Calif.-based firm, for multi-disciplined product design services.

Last year, Plantronics had a new request for IDE: design a high-end cycle test system to replace the equipment currently used to cycle test its plastic headsets. With a tight deadline looming, IDE enlisted the help of Automation Controls. Based in Campbell, California, Automation Controls is a solutions-based automation provider, offering IDE applied knowledge, value-added services, and specialized control solutions.

Automation Controls worked closely with IDE to design the new test solution, delivering a complete motion control and operator interface, from concept solution to full design. Together, the two companies produced a new test system that improved productivity and increased reliability by automating the test system functionality. A secondary benefit was the elimination of the constant, excessive audible noise of the old test equipment.

### ***New Automated Test Systems Reduce Noise, Eliminate Operator Error***

“Because the old test equipment was pneumatic-based, the test floor was constantly filled with a clacking and hissing noise,” said David Moriconi, president and CEO of IDE. “Plus, downtime occurred whenever the test systems’ air cylinders broke.”

Exposed AC wiring was another issue to be resolved. Every time the test equipment operators prepared a headset for a new test, they were required to put their hands into an area of the machine containing the mechanical switches and associated wiring. A more pressing problem, however, was the efficiency of the test process itself. Plantronics required that its headsets be tested at different torque levels and in various positions. Test system operators had to start and stop the test equipment to manually reset test parameters – a process that required 15 minutes per setup. Typically, each operator was in charge of ten test stations, resulting in 150 minutes of test setup time for each new test.

“The setup process was eating into the operators’ shifts, and reducing productivity,” said Moriconi. “Plus, reliability was down – the mechanical test process just left too much room for error. It was time to bring the test environment from the industrial revolution to the computer age. To accomplish this, we needed Automation Control’s help to eliminate the mechanical switches and to automate the test process.”

### ***Omron Electronics Helps Propel Plantronics into Production Express Lane***

IDE has provided best-in-class product design services to technology companies around the world since 1985. The company’s clients include major manufacturers — Agfa, AT&T, Bio-Rad, Compaq, Epson, Ericsson, Fujitsu, Johnson & Johnson, Mitsubishi, Philips, Seagate, Silicon Graphics, Samsung, Tandem, Tatung, and Xerox, to name a few.

“We knew the key to improving the performance of the cycle test systems was to employ contemporary components such as stepper motors and servo motors in our design,” said Moriconi. “When we

search for controls partners, we judge them on a number of factors. They have to be technically competent, able to deliver product to us in a timely manner and their services must be reasonably priced. When Automation Controls came across our radar, it was clear that they could provide what we needed, and then some.”

For example, because the stroke of the test system and the torque threshold needed to be adjustable, a servo-controlled linear actuator was important. This type of actuator would enable IDE to eliminate sensor switches in the flex test area. As a result, test equipment operators would no longer have to manually change switches for each test, but instead could rely on a touch panel to control test parameters.

Automation Controls was able to provide this custom-designed linear unit, as well as servo actuators to position the test surface. Through its partner Omron Electronics, a leading manufacturer of industrial automation solutions based in Schaumburg, Illinois, Automation Controls also supplied the logic/motion controller and LCD touchscreen operator interface required to easily set test parameters and run tests. The Omron servos use a simple communication platform called Mechatrolink, which significantly cuts back on system wiring.

### **Setup Time Slashed Nearly 95 Percent**



“The Automation Controls solution allows our client to run nine million test cycles per year, per test station,” said Moriconi. “Each of the four test systems Plantronics purchased from us has ten test stations. In addition, test equipment operators can use the touch panel to set up the tests – no more setting of manual switches. As a result, productivity is way up – each set of ten tests requires only ten minutes of setup, compared to 150 minutes for the old test solution.”

In addition, the Automation Controls cycle test solution facilitates test scheduling and production by maintaining an accurate count of test cycles in real time. Plus, the equipment is configured with battery backup so that the correct test count is retained even if the system is inadvertently turned off, or if the building experiences a power outage.

“Automation Controls provided a set of components that work very well together,” said Moriconi. “They are also highly configurable, allowing test system operators to set many parameters all via the touch panel’s graphical user interface. These new test systems are designed with the user in mind and eliminate a lot of the problems associated with human error.”

Moriconi says IDE will definitely work with Automation Controls on future projects. “Automation Controls helped us deliver a new test solution that exceeded Plantronics’ expectations,” said Moriconi. “When they saw the Automation Controls prototype and all of its features, they were impressed. Essentially, Plantronics ordered a Toyota, but received a Lexus.

“We made our client very happy,” continued Moriconi, “and they have ordered four additional test systems. This project has been great for our business, and we look forward to bidding competitively on similar business in the future. Without the support of Automation Controls, this project would not have been possible.”



#### **Corporate Headquarters**

743 Camden Avenue  
Campbell, CA 95008  
Ph: 800.922.6646  
Fax: 888.332.2480

[www.automationcontrols.com](http://www.automationcontrols.com)

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