


Connector Industry Supports Future Engineers Through FIRST

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Students are introduced to connectors as they build and design competition robots.

The electronics industry is always looking for the next great innovation. But we also need to look for the next great innovators. Attracting a new generation of talent is an especially pressing issue for the connector industry, which doesn't command the high visibility that other areas of technology world experience. One way connector companies are introducing prospective engineers to connectors is through the popular sport of competitive robotics.

FIRST (For Inspiration and Recognition of Science and Technology), a program founded by inventor and technology advocate Dean Kamen, gives students hands-on experience with electronics through robotics. This global program exposes more than 515,000 students around the world to the principles of electronics design. Elementary through high school students design, build, and program robots using professional components from suppliers and distributors across the industry, including Digi-Key, Mouser Electronics, TE Connectivity, Samtec, Belden, Sager Electronics, and many more. The teams compete at local and national events, and for many, these hand-on learning experiences ultimately lead to a career in technology. [Electronic Components Industry Association \(ECIA\)](#) has become one of FIRST's key supporters.





Future engineers at work: Mouser sponsors the Haltom Robotics team from Haltom City, Texas, and one of the company's technical support specialists is a mentor for the team.

“ECIA and our members have enthusiastically supported the FIRST Robotics Competition program for six years,” said Debbie Conyers, executive director of the ECIA Foundation. “We not only encourage member companies to contribute to the Kit of Parts, but to get involved by mentoring and sponsoring local teams. A FIRST team is invited to each ECIA event, providing additional exposure for local teams.”

The electronics manufacturers and distributors that participate in FIRST programs make an impression on their future buyers and employees. According to [a Brandeis University study of past FIRST participants](#), 41% of students who took part in a FIRST robotics team later pursued an engineering degree, and more than 75% were in a science, technology, engineering, and math (STEM) field as a student or professional. In other words, getting connectors in front of FIRST students is a powerful way to introduce the technology to the people who will some day use or design them. The ECIA helps connect alumni from the FIRST program to electronics companies through internships, and encourages ECIA members to participate as coaches, mentors, and competition volunteers.

“Electronics education is key to Mouser’s mission, going back to our founding more than 50 years ago,” said Kevin Hess, Mouser’s senior vice president of marketing. “We are very proud to continue sponsoring FIRST, which supports the brightest young minds and future engineers. The FIRST Robotics Competition provides students with a platform for innovation, a chance to solve real engineering challenges, and an opportunity to build character and self-esteem”

Each FIRST team receives a Kit of Parts from which they build their creations. The high school teams get the same core collection of about 30 pounds of components and materials, and as their designs evolve, they may specify additional parts as needed. What's in the kit? Robotics essentials including: cables, motors, switches, pressure valves, control modules, power distribution panels, a netbook, and joystick, as well as various connectors, including USBs, plugs, sockets, battery connectors, and more.

In 2018, teams will build robots on a theme inspired by arcade games. Two three-team alliances are "trapped" in an 8-bit video game, where they must control their robots to perform tasks and defeat the evil boss to win the game. Teams have six weeks to transform their kits into working robots designed to perform specific tasks.

Mouser sponsors FIRST teams on the local, regional, and global level, and sponsors the Dallas Regionals competition and the University Interscholastic League (UIL), the state's main body overseeing competitions among public schools. Mouser also sponsors the FIRST championship in both Houston and Detroit.

Digi-Key contributes to the Kit of Parts and lets FIRST Robotics Competition teams choose from its full catalog, offering a \$50 voucher to the young engineers. The company also supports students at the university level through a variety of academic programs.

TE Connectivity sponsors more than 70 FIRST teams and provides mentors and components, including wire-to-wire connectors in the Kit of Parts. The company also offers scholarships and product vouchers, enabling students to browse their full catalog and specify the parts needed for their designs.

Sager Electronics sponsors a team in the company's home base of Massachusetts and supports the national program through the ECIA.

Samtec, a FIRST supplier, also makes the board stacking interconnects that are used in the roboRio computing platform.