The technology (and driver) inside a winning Indy 500 car

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When it comes to the racing world, electronics suppliers and distributors are often behind the scenes—or under the hood, as it were—rock stars. Sure, they're the reason the engine runs or making sure the driver and crew are safe, but they're very rarely a focus in the racing world. Unless, of course, you're talking about Mouser's sponsorship of Indy car driver Tony Kanaan…then it's all about being front and center (literally.)

When Kanaan—a real underdog in the racing world—won the 2013 Indy500 on his 13th try, it seemed like everyone—and that includes his competitors—was cheering for him.

“I knew I had a chance and if I had a good day it was going to be today, but I was quite comfortable with the fact that probably I was not going to win, but every chance I had I believe that I could,” Kanaan said in an exclusive interview with ECN at Mouser HQ in Mansfield, TX. “When I crossed the finish line I was able to say, you know, after 12 years we finally made it.”

The “we” in this case probably refers to KV Racing, but you can’t forget about the real star of the show: the car. No doubt, Kanaan is a great driver—and a nice guy—but he also had a great car and a killer team of engineers behind him.

As the team prepared for the Firestone 550 at Texas Motor Speedway (Spoiler alert: Kanaan finished 3rd), I sat down with Lead Engineer Eric Cowdin to get to know a little more about the technology and the Indy-winning car.

Part of the challenge, unique to Indy, is designing a car that can handle a wide-variety of tracks from one-mile ovals to temporary street circuits with manholes. The solution is multiple chassis, each suited for a particular challenge.

But let’s talk about some technology broken down into two areas: the team controlled data system and the engine. The data system is made up of different sensors that monitor how the car is racing. The team will monitor loads, pressure, and other variable that could affect the car or driver which can be watched in real-time from the pits. They’ll also monitor for safety issues.

For the engine, it’s mostly fine-tuned by Chevy and Elmore Engineering, who take care of their proprietary electronics systems.

And what do they do when all that advanced technology says one thing, but the driver is saying another? Depends on what you’re talking about.

“If it’s something to do with the actual balance of the car, we generally almost always trust the driver because he has the sensory connection,” says Cowdin. But when it comes to things that the team can see, but the driver can’t feel, the technology wins. “He has trust in us and we have trust in him, he knows we’re not going to pull him off the track if it’s not absolutely necessary.”

But the car, like the driver, must have a nearly perfect run to win the coveted Borg-Warner trophy, and appreciation goes to the technology and the engineers for ensuring the great run.

Cowdin, who has been working with Kanaan for years, says it was hard to pick an emotion to describe the winning moment.

“When you have a driver like Tony, that you know when you show up at a racetrack every weekend he could win, and especially at Indy, the overwhelming thing that stayed with me is relief that it actually happened," says Cowdin. "It’s one of those milestones in life, and in racing, that you always strive to achieve."

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