

## Helping out on the race track

Before a race car can hit the track, the electronics must be thoroughly tested. A CAN-capable oscilloscope from Rohde & Schwarz supports a racing team on this purpose.

This article originally appeared in the [June issue](#) of the CAN Newsletter magazine 2019. This is just an excerpt.

The Formula Student (FS) competition features student-developed race cars resembling Formula 1 cars. The FaSTDa Racing team from Darmstadt University of Applied Sciences equipped the F18 Clara – last year's race car – with extensive sensor technology. This is an area in which the students do a lot of testing with a portable Rohde & Schwarz (R&S) oscilloscope. The integrated data-logger of the R&S Scope Rider RTH enables sensor data acquisition and long-term monitoring. Transferred CAN data can be analyzed with the decoding function. In addition, the students can reliably measure currents and voltages up to 1000 V with the handheld oscilloscope.

### Formula Student

The FaSTDa Racing team is a group of students at Darmstadt University of Applied Sciences who have developed and produced their tenth race car with a combustion engine as part of a project in the 2017/18 academic year. It will compete in the Formula Student motorsport class. What matters in these races is not only the fastest car, but also the best team score. The engineering design, racing performance, cost report, and business plan are assessed at Formula Student Germany, the world's largest competition of its kind. The target customers are hobby race drivers. The jury consists of experts from the automotive and supplier industries. Since 2006, FS Germany has taken place annually in August at the Hockenheimring circuit and is sponsored by the VDI.



*The electronics of the new F18 Clara race car of the FaSTDa Racing team from Darmstadt University of Applied Sciences are being optimized with the Scope Rider RTH (Source: FaSTDa Racing Team)*



*Debugging CAN data (Source: FaSTDa Racing Team)*

There, the teams participate in three classes: driverless, electric, and combustion engine. Comparable competitions also take place at other internationally known race tracks. The Darmstadt team's F18 Clara was publicly unveiled in late May 2018. With a 59 hp modified one-cylinder KTM engine, it accelerates from 0 km/h to 100 km/h in 4 s and has a top speed of around 130 km/h. The budding engineers optimized their race cars up until the first races in late summer 2018. Racing performance includes attributes such as vehicle dynamics, handling, acceleration, endurance, and fuel or energy consumption in autocross, skid pad, acceleration, and endurance races.

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