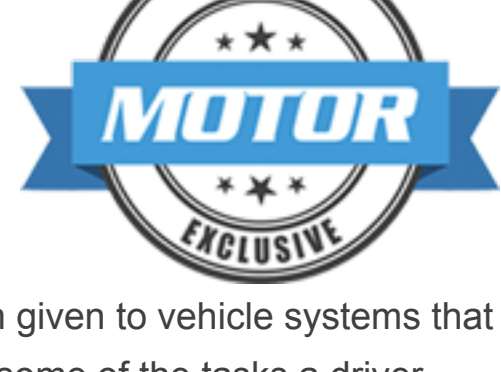


AUTOMOTIVE DATA SINCE 1903

ADAS: SHOULD I BE SCARED?

Posted on May 31, 2022

The reality is that ADAS isn't that hard. With the right tooling, training and information systems, ADAS can be pretty simple and, more importantly, profitable



By Pete Rudloff

Advanced Driver Assist Systems, better known in the industry as ADAS, is a fancy term given to vehicle systems that work to make the driving experience safer for the occupants of the vehicle by reducing some of the tasks a driver would perform when driving a car without ADAS. Typically, ADAS will run autonomously in the background whenever a vehicle is in operation.

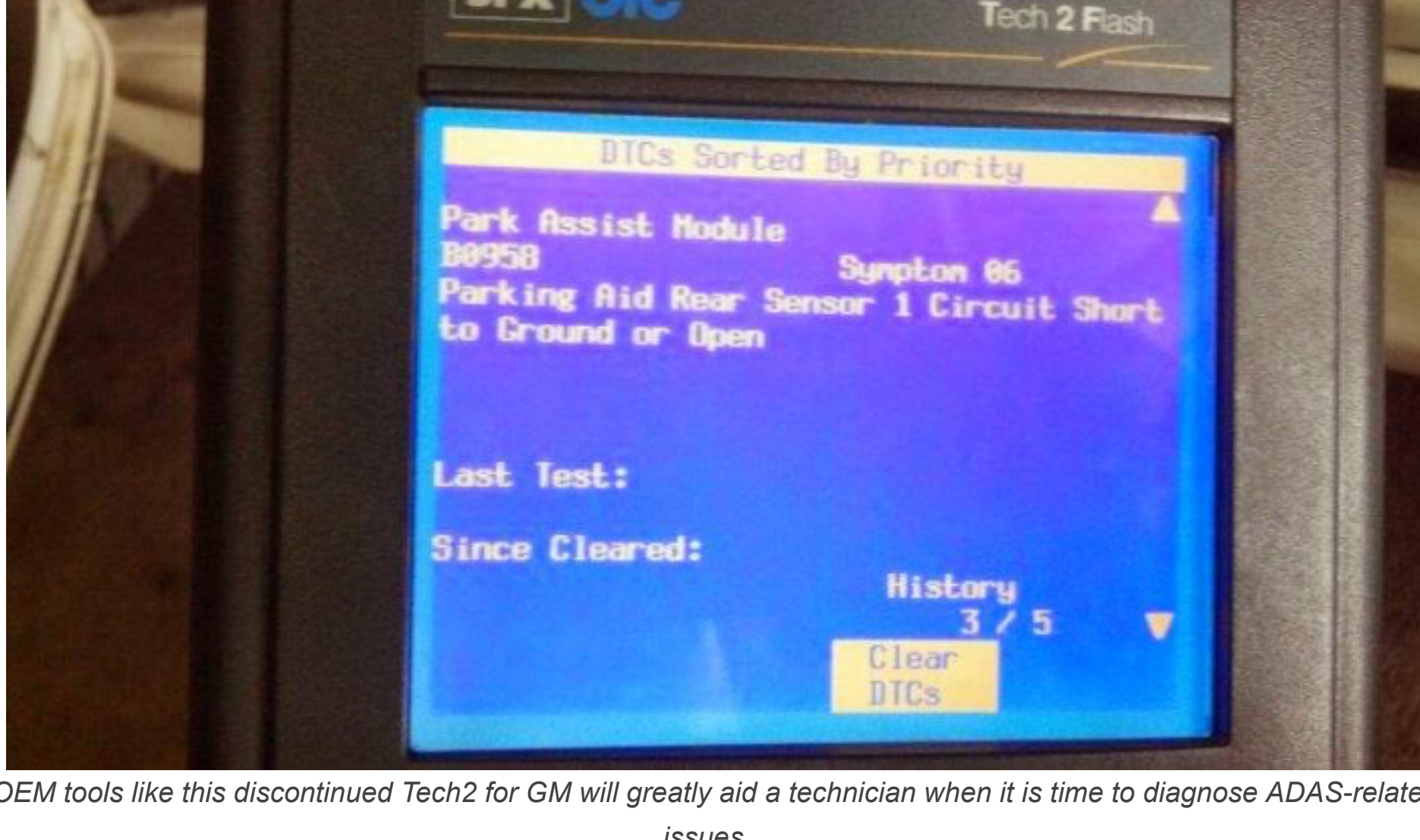
Examples of ADAS include adaptive cruise control, lane departure warning, blind-spot detection, backup cameras, automatic braking and a whole host of other features.



Systems like lane departure warning are commonplace on modern automobiles. Like all other systems on a car, they can break or be damaged in a collision. As ADAS becomes more common, shops will be faced with the question of whether working on ADAS is right for them.

For decades we have seen seriously complex safety-related systems, some that even rival the complexity of ADAS class systems, but ADAS is more than just safety systems. Safety systems like anti-lock brakes and Supplemental Restraint Systems (air bags) predate most ADAS systems and have one goal, make the car safer for the occupants. ADAS takes this a step further and can be used to make a vehicle easier for the driver to operate and, in some cases, makes up for a semi-distracted driver, slow-reacting drivers and, in other cases, lets the driver take their hands off the steering wheel altogether. Make no mistake, ADAS is the herald of the autonomous driving cars we will see in the future.

When it comes to working on or calibrating ADAS systems, it will be important to have the correct tools for the job. Advanced scan tools capable of communicating at the OEM level will be required. In some cases, specialized targets will be necessary in order to complete calibration processes. For those of us who have been repairing cars at a high level, this is nothing new. Surely, I'm not the only person sitting on a Miller special tool for calibrating seats weight sensors for older Chrysler air bag modules, right? I'm sure some technicians cheated the seat weight calibration by using dumbbells or a watermelon and maybe they even got the calibration close or good enough, but the Miller tool seat weights were the only tool that would get the calibration 100% correct. I rarely see a need for dusting off my Miller Tools seat weights nowadays, but there was a time when the only shops in my area that could accurately do the seat calibration were mine and the Chrysler dealers.

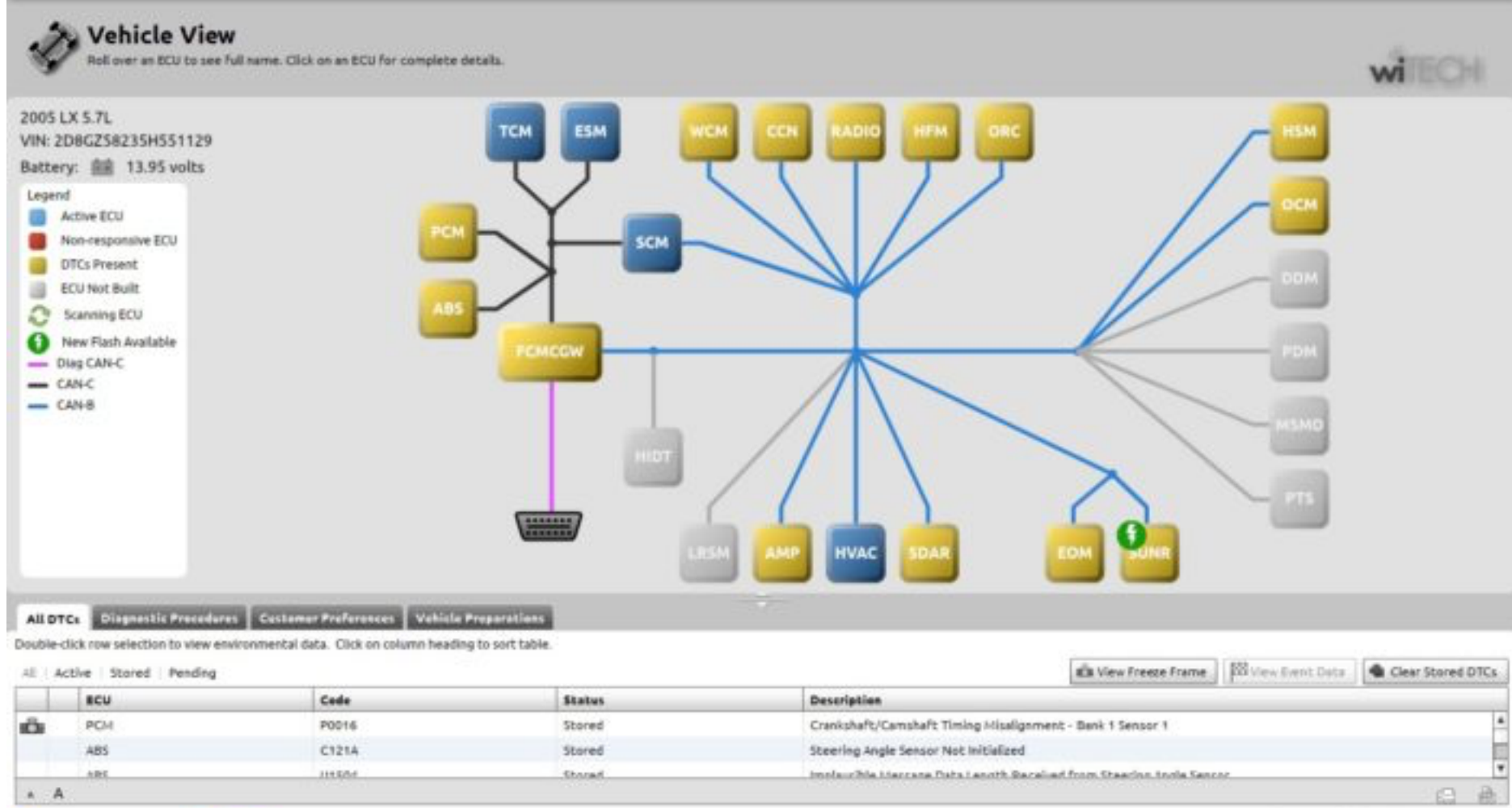


OEM tools like this discontinued Tech2 for GM will greatly aid a technician when it is time to diagnose ADAS-related issues.

In addition to having the right tools, shops and technicians will be wise to invest in training. Having tooling without training can be an expensive disaster. A few months back, I consulted a vehicle owner on an ADAS calibration gone wrong by a local windshield company after a front glass replacement on a 2019 Audi Q8. They had a reputable scan tool and thought they had good targets. The technician hadn't been trained on the process yet and decided to give it a try anyhow. Unfortunately for all, the technician ended up doing something that put the module permanently into protection mode. I still don't understand how they managed to make such a condition happen. Nonetheless, the car was subsequently shipped to the local Audi dealer and the total cost to repair was about \$5,000 and was shouldered by the glass company. Spending money on training ahead of time would have saved the shop thousands of dollars and the embarrassment of breaking a client's vehicle.

The last step is making sure you have a quality service information system like *MOTOR e-Tech Online*. For ADAS-related work, you may find you need to augment your service info by buying short-term subscriptions from the OEMs as well.

Key points to remember about working on ADAS systems is that they are wired and bussed systems just like the many "normal" vehicle systems we've been fixing for a hundred years. Technicians with a good understanding of wire diagrams and module networking will find ADAS isn't much different than SRS or ABS systems. Sure, there's the introduction of cameras and LIDAR and RADAR, but when these systems are broken down to component level, they are pretty simple to understand. From a wiring and networking standpoint, there is nothing we haven't seen; so the challenge is just understanding what the component does. Once you understand the theory of operation, it becomes easy to troubleshoot. Most ADAS components are not going to be taken apart and fixed because component replacement is typically the preferred method of repair by the manufacturers. This means there is little education needed about how to rebuild these components.



Understanding how to read wire diagrams and module networking maps like the one above is really critical to being able to easily diagnose ADAS issues.

Decent aftermarket ADAS calibration equipment can run in excess of \$25,000, plus annual subscription costs on top of that, so the cost of entry isn't what most would consider cheap. Market demand for calibrations typically commands prices between \$250-\$600 per calibration, so when you crunch the numbers, ADAS ROI is quite a bit better than an alignment rack. And that assumes you can find a quality alignment rack that cheap. My point would be that maybe it's not *that* expensive to tool up for ADAS work and, just maybe, you'll find a lucrative niche for your shop by offering ADAS calibration services.

On the other hand, if you or your shop isn't strong with electrical work already, maybe it's best to sublet ADAS work to someone who is trained and tooled to do the work. It could save you a ton of money in the long run. Most regions have more than one shop that specializes in this kind of work.

The need for ADAS calibration will be around for a while, but I predict most manufacturers will gravitate to systems that can self-calibrate within the next 5-10 years. Some are already using self-calibrating ADAS systems. When that happens, ADAS calibration equipment will slowly go the way of the big box analyzers of the 1970s and 80s and my Miller special tool seat weights. Whichever direction your shop chooses to go on ADAS, give it a healthy respect, but there is no need to be scared of it.

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