DATASPEED inc.
making mobile easier®

BY-WIRE KIT

FOR AUTONOMOUS DEVELOPMENT

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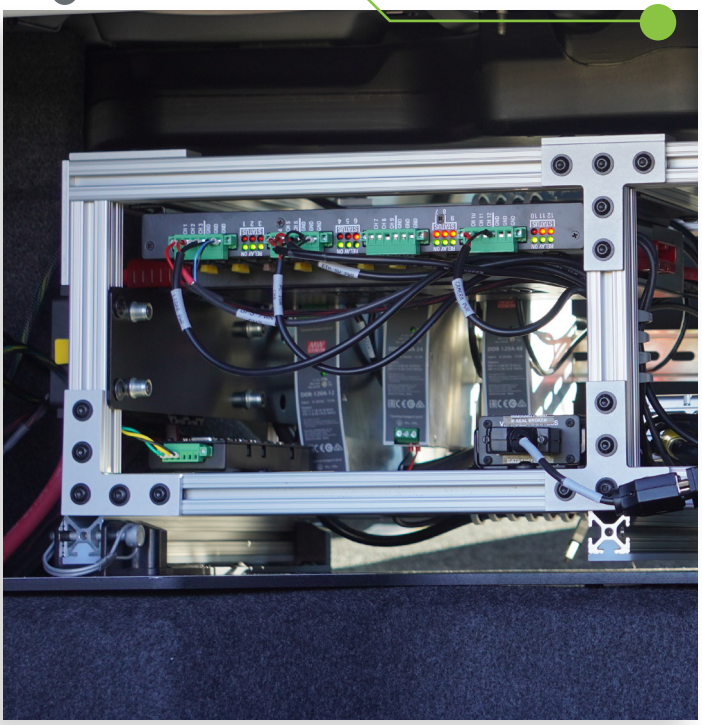
DATASPEED DRIVE-BY-WIRE KIT

For Control of Your Autonomous Platform

The By-Wire Kit is a complete industrial-grade hardware and software solution that allows seamless electronic control of a vehicle's brake, throttle, steering, and shifting to enable testing for autonomous vehicle applications. The By-Wire Kit taps into the vehicle's existing control system and CAN bus messaging with minimal modifications to production parts and without disabling safety features. It can be installed within a few days, allowing your engineers to get up and running quickly on their algorithm, sensor, or data research.



What Hardware is Included?

- Brake, throttle, steer, and shift by-wire controller modules
- CAN interface module with 4 networks up to 1Mbps each and configurable bit rates
- CAN breakout module enabling up to five additional nodes (additional available for further expansion)
- intelligent Power Distribution System (iPDS) with 12 Channels
- Touchscreen Display Kit for iPDS
- Inverter module (if required based on geographic location)
- Discrete wiring harness with positive locking mechanisms on every connector
- E-Stop Button
- Installation Baseplate and Mounting Rack (if applicable to vehicle platform)
- Demonstration Pack including joystick controller and carrying bag

What Software is Included?

Controlling vehicle actuators in a self-driving vehicle can be challenging, and developing such systems can consume large amounts of time, without adding significant value to higher-level projects. The included Dataspeed ROS Driver and Universal Lat/Lon Controller (ULC) is designed to alleviate this issue. The ULC provides equivalent interface and control behavior across all Dataspeed By-Wire platforms. Therefore, engineers using a particular vehicle platform can easily port existing software to another platform.

- Embedded in Drive-by-Wire Kit Firmware
- Full-range Speed Control
- Automatic Shifting
- Natural Set Speed Transitioning
- Kinetic Yaw Rate and Curvature Control
- Configurable Dynamics Limits
- Independent Subsystem Disabling
- Versatile Integration with Other Controllers

Available Platforms

Vehicle Type	Vehicles	Model Years	Required Features
Sedan	Lincoln MKZ	2017-2020	• Hybrid
Sedan	Ford Fusion	2017-2020	• Hybrid
Sedan	Ford Mondeo	2017-2020	• Hybrid
Crossover	Ford Mustang Mach-E	2021-2023	
SUV	Ford Edge	2019-2022	• Adaptive Cruise Control
SUV	Lincoln Aviator	2020-2022	• Adaptive Cruise Control • Active Park Assist
SUV	Jeep Grand Cherokee	2018-2021	• Adaptive Cruise Control with Stop • Parallel and Perpendicular Park Assist
Minivan	Chrysler Pacifica	2017-2022	• Hybrid • Parallel and Perpendicular Park Assist
Cargo Van	Ford E-Transit	2023	
Pickup	Ford F-150	2021-2023	• Adaptive Cruise Control • Console Mounted Shifter [1]
Pickup	Ford Ranger	2019-2021	• Console Mounted Shifter [1]
Neighborhood	GEM	2016-2023	• Tilt Steering with EPS
UTV	Polaris RZR	2020-2023	• Electronic Power Steering (EPS)
UTV	Polaris Ranger	2023	• Electronic Power Steering (EPS)

[1] Shift-by-wire not available for column mounted shifter.

Maintenance & Support

- One-year By-Wire Maintenance Subscription included for hardware replacement & firmware updates
- By-Wire hardware, such as the electronic control units and other components, will be unconditionally replaced if any defect is found (not valid if tamper proof seal is broken)
- Telephone and email support is also included for any issue that arises during installation or use of the By-Wire Kit
- Access is provided to all the latest software and firmware releases, as they are made available

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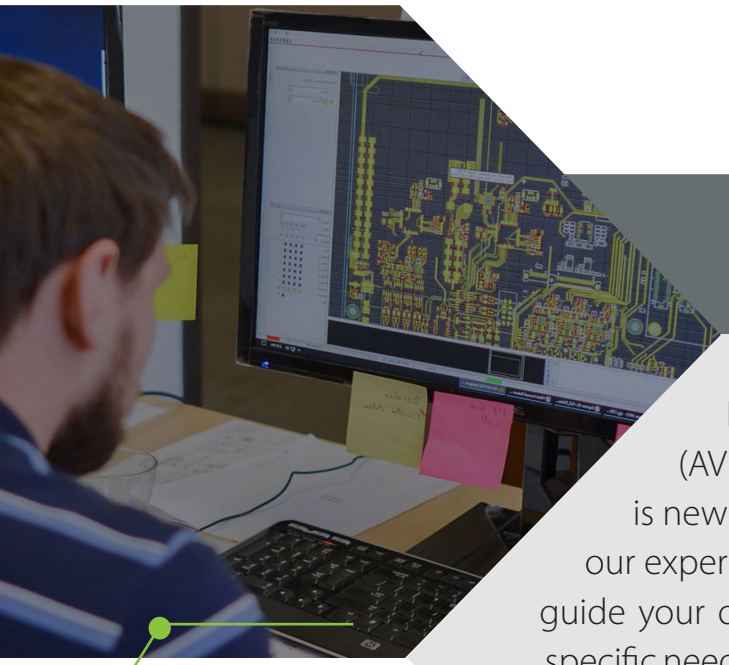

Partner with Dataspeed

Dataspeed specializes in innovative autonomous vehicle (AV) research and testing platforms. Whether your company is new to the industry or is looking to expand your current fleet, our experienced team of engineers and business professionals can guide your organization in developing an action plan to meet your specific needs. We're skilled in full vehicle integration including by-wire implementation, sensor and computer installation, data acquisition, and vehicle communications. Our vehicle systems engineers have extensive experience creating custom hardware and software solutions. Contact us today to discuss how Dataspeed can accelerate your AV research and development.