S-E-A™

VEHICLE & PRODUCT SOLUTIONS

# AUTOMATED TEST DRIVER

The **Automated Test Driver (ATD)** is a user-friendly device that allows for dynamic vehicle testing of regulatory and performance maneuvers. With the use of steering, brake and throttle robots, this technology can perform a wide array of precise and repeatable manned and unmanned vehicle tests.

Driving profiles can be selected from a list of stored maneuvers, or quickly programmed through a graphical user interface. The ATD can be deployed in multiple vehicles and equipped with vehicle-to-vehicle (V2V) communications to enable the system to maintain control of even the most complex test scenarios. Whether our clients require dynamic handling tests or complex multi-vehicle scenarios, the ATD can perform them with ease and map the results on a virtual image of any proving ground.

## KEY FEATURES

### Multiple Vehicle Testing

- Choreographed maneuvers of multiple vehicles
- Intersection/Junction Crossing
- Pedestrian and Cyclist Safety

### Advanced Driver-Assitance Systems Testing (ADAS)

- Crash Imminent Braking (CIB)
- Autonomous Emergency Braking (AEB)
- Dynamic Brake Support (DBS)
- Lane Departure Warning (LDW)
- Lane Keeping Assist Systems (LKAS)

### Destructive Testing

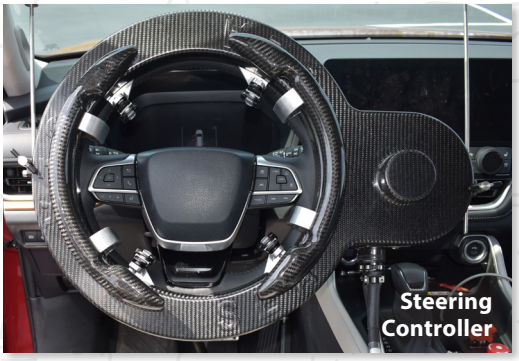
- Vehicle Rollover
- Vehicle to Barrier

### Vehicle Handling and Stability

- J-Turn, Fishhook, Sine-with-Dwell
- Constant Radius
- Single and Double Lane Change
- Winding Road Course
- Path Following Maneuvers
- Vehicle Speed Control
- Pedal Position and Force Control

Installation and configuration of the ATD is quick and easy, and the system does not interfere with the vehicle airbag. The carbon fiber and aluminum construction creates a minimal moment of inertia (MOI) on the steering wheel. Test data can be monitored in real-time and results are immediately available.

| AUTOMATED STEERING CONTROLLER | |
|---|---|
| Maximum Torque @ 500 deg/sec | 54 N-m |
| Maximum Angular Rate | 1200°/sec |
| Angular Resolution | < 0.04° |
| Angular Accuracy (measurement) | 0.1° |
| Angular Accuracy (following error) | < 2° Overshoot and < 0.5° Steady State |
| Computer Connection | Ethernet |
| Steering Wheel Assembly (LxWxH) | 467 x 625 x 83 mm |
| Weight | 10.2 kg |


Steering Controller

| BRAKE-THROTTLE CONTROLLER | |
|---|---|
| Maximum Vehicle Pedal Force | 450 N |
| Maximum Vehicle Pedal Position Rate | 305 mm/s |
| Position Resolution | < 1 mm |
| Motor Assembly (LxWxH) | 203 x 381 x 203 mm |
| Weight | 13.5 kg |


Brake-Throttle Controller

| ELECTRONICS BOX | |
|---|---|
| Computer Connection | Ethernet |
| Operating System | Windows |
| Power Requirements | 12VDC @ 10 A |
| Digital Inputs | 2 (Typically used for Trigger Signal) |
| CAN Inputs | GPS/IMU, External Sensors |
| CAN Outputs | Steering Angle, Steering Torque, Brake-Throttle Position |
| Data Acquisition | 100 Hz |
| Audible Detection (optional) | In-vehicle Audible Warnings as Triggers for ADAS Testing |
| Visual Detection (optional) | In-dash Telltale Signs as Triggers for ADAS Testing |

## AVAILABLE CONFIGURATIONS


Electronics Box for Standard ATD System


Controller and Drives Boxes

Electronics Boxes for Rugged ATD System


Aluminum and Carbon Fiber Shrouds

**To schedule a demo or request more information:**

**VPS@SEAlimited.com**

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