Driven.

VEHICLE DYNAMICS

ENGINEERING - INNOVATION - PRECISION

Think Differently. Think Dynamically.

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, repeatable, 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

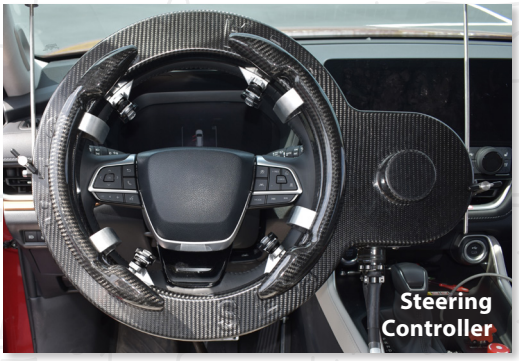
Vehicle Handling and Stability

- 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 Red System


Controller and Drives Boxes

Electronics Boxes for Rugged ATD System


Aluminum and Carbon Fiber Shrouds

To schedule a demo or request more information:

VehicleDynamics@SEAlimited.com

SCAN TO LEARN MORE!