

Highway-speed ADAS testing

Guided Soft Target™ 120 (GST 120™)



The GST 120 is the most capable surrogate vehicle system currently available for testing vehicle Advanced Driver Assistance Systems (ADAS). With a top speed of 120km/h, GST 120 is the only product on the market capable of testing highway assist and drive pilot systems at realistic highway speeds.

The GST 120 shares many of the class-leading features of AB Dynamics original GST design which is widely used for Euro NCAP testing. It benefits from an ultra-low height of just 100mm, capability of operating at speeds of up to 120km/h and a class leading 4.8kWh battery.



GST Platform



Low height aluminum chassis with retracting wheels



Twin motor electric drive system



Electrically-actuated steering system



4.8kWh lithium iron phosphate battery for outstanding power



4 disc hydraulic braking system with fail safe emergency braking



ABS braking to prevent wheel lock and optimise deceleration control



Inertial Navigation System with GPS correction



Accurate path-following and speed control



Synchro software allows coordinated motion with other vehicles



Uses AB Dynamics' proven driverless control system

The GST 120 enables high-speed collisions to be carried out without causing significant damage to the test vehicle. It consists of a GST Platform, which can be driven over, and a separate foam panel body (the Soft Car 360™ harmonised Global Vehicle Target, GVT). When the platform is driven over, the wheels retract into the chassis to protect the platform's suspension and to provide the minimum possible shock input to the test vehicle's suspension.

Using electric motors with on-board batteries to propel the vehicle, the GST Platform houses a control system which can accurately guide the vehicle along a pre-programmed course at a defined speed. The batteries used to power the system will provide sufficient power for a typical day of testing, though they can easily be recharged between tests by connecting to a suitable supply.

The controller uses position feedback from a high-precision GPS-corrected inertial navigation system to allow accurate path-following control to be achieved. The time signal from the GPS unit is used to ensure the precise millisecond synchronisation that is necessary to generate accurate and repeatable crash and close-passing scenarios.

The GST is controlled via radio from the same remote base-station that is used by AB Dynamics standard driverless testing system. By using the same systems as AB Dynamics' robots, the GST can be used at the same time as other vehicles, to create complex multi-vehicle tests. AB Dynamics' proven Path Following and Synchro control technology allows the GST 120 to seamlessly integrate with all of AB Dynamics existing track testing products.

Specifications

Typical maximum speed	120km/h+ (fitted with Soft Car 360 GVT)
Maximum acceleration	0.28g (fitted with Soft Car 360 GVT)
Maximum deceleration	0.8g (with ABS)
Maximum lateral acceleration	0.4 – 0.5g
GST Platform length	3160mm
GST Platform width	1680mm
GST Platform height (suspension retracted into chassis)	100mm
GST Platform wheelbase	1670mm
GST Platform front track	790mm
Max ground clearance, set to max ride height	20mm
Edge detail	22deg edge for minimal radar reflection
Testing duration	Full day (typical)
Battery capacity	4.8kWh (removeable for shipping)
Path-following accuracy	Meets Euro NCAP requirements of +/-0.1m Note: Measurement accuracy dependent upon motion pack (2cm 1SD RMS typical maximum). Compatible with OXTS and Genesys products
Over-run capacity	Up to 1000kg per wheel (500kg with ultra-low-profile top plate). Optional HD version 9000kg/axle

About AB Dynamics

AB Dynamics is a leading global provider of automotive test and verification solutions that facilitate the development of vehicles that are safer, more efficient and sustainable. As part of the AB Dynamics Group of companies we enable customers to develop and test in virtual environments, validate on the track and then evaluate vehicles on public roads.

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