

Case Study

Oxford Technical Solutions

Calian Antenna Enhances the Performance of the OxTS Advanced Driver Assistance System (ADAS)

Background

The AB Dynamics LaunchPad is a pilotable platform designed to carry Vulnerable Road User (VRU) targets, such as pedestrian, cyclist, and moped dummies, for ADAS development and testing. The LaunchPad50 chassis, designed with a high-strength aluminium, is robust enough to cope with being repeatedly driven over by a large test vehicle, including SUVs.

At the heart of the LaunchPad50 is an OxTS GNSS/INS motion pack. Blending GNSS positioning with inertial measurements, the motion pack outputs a 3D navigation solution used for path planning and control of the LaunchPad50 robotic platform. Launchpad50's Synchro and path-following technology uses precise position, velocity, and acceleration measurements to enable precise choreography with the subject vehicle and perform complex manoeuvres necessary for current and future ADAS testing protocols.

The new API integration has already been deployed in the field and demonstrates Scout's interoperability with a variety of radio systems and applications.



AB Dynamics
LaunchPad50

LaunchPad50 is capable of a maximum speed of 50 km/h with a target onboard, making it suitable for cyclist, moped and scooter dummies, as well as pedestrians.

Unlike belt-driven platforms, LaunchPad50 can follow complex paths not restricted to straight lines. Our powerful path-following software makes the design of a test a simple job.



Customer

- Oxford Technical Solutions

<https://www.oxts.com/>

- AB Dynamics

<https://www.abdynamics.com/>



Calian Partner

- Innovelec

<https://innovelec.co.uk/>



Application

- Navigation and Control



Featured Product

- TW3882 Antenna

“The challenging environment and use case of the LaunchPad meant that standard off-the-shelf antennas weren’t performing as well as we wanted. Working with Calian, they listened to our requirements and reviewed the LaunchPad design to provide an antenna with bespoke tuning suited for this application. We’re very happy with the results that have been achieved.”

Iain Clarke, Senior Product Engineer at OxTS

Challenge

The custom tuning for the LaunchPad50 was challenging because the antenna was recessed into the chassis to survive being runover repeatedly. This reduced the antenna’s performance and decreased the accuracy of the path-following algorithms. The solution would be a robust and accurate antenna that could be mounted onto the chassis.

Solution



TW3882 Dual-Band GNSS Antenna

The TW3882 employs Calian’s unique Accutenna® technology especially designed for precision dual frequency positioning. The custom tuning helps filter multipath and maximise performance despite a low elevation and recessed design.

Product	Coverage	Mount	Gain (dB typ.)	Weight (g)
TW3882	GPS L1/L2, GLONASS G1/G2/G3, Galileo E1/E5b, BeiDou B1/B2	Through-Hole	35	185

Success Story

Calian’s technical expertise and superb technical support enabled OxTS to pair the LaunchPad50 with the perfect antenna: the TW3882, offering the precision needed and the radome design to withstand multiple runovers by large vehicles.

About Calian

We keep the world moving forward. Calian® helps people communicate, innovate, learn and lead safe and healthy lives. Every day, our employees live our values of customer commitment, integrity, innovation and teamwork to engineer reliable solutions that solve complex problems. That’s Confidence. Engineered. A stable and growing 40-year company, we are headquartered in Ottawa with offices and projects spanning North American, European and international markets. Visit calian.com to learn about innovative healthcare, communications, learning and cybersecurity solutions.

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