

## CASE STUDY

November 2009



### ***ATI VISION and Kvaser Interfaces Satisfy Ford's Engine Development Requirements from Prototype to Production***

Ford Motor Company's research centre at Dunton is the largest automotive design and engineering facility in the UK and a long-term customer of Accurate Technologies Inc. (ATI) and Kvaser products. Home to several thousand engineers, designers and support staff, Ford Dunton uses an impressive array of ATI and Kvaser products for calibration and diagnostics during the design and development of Ford's small and medium sized cars and commercial vehicle range. According to Trevor Griffiths, Calibration Tools Specialist for Ford Dunton's Powertrain Control Systems Engineering division, engineers there use ATI's VISION Calibration and Data Acquisition Software, combined with Kvaser CAN interfaces, to perform calibration throughout the engine development process – from prototype to production.

Ford Dunton has used ATI VISION Calibration and Data Acquisition Software since 1998. As Griffiths explains: "When developing strategies for engine control, it is necessary to make calibration changes dynamically – so we are looking for real-time feedback." VISION not only allows calibration changes at any time, but also permits the addition or removal of data items in the same manner; on the fly without starting or stopping VISION, (otherwise known as online or offline operation). Using VISION provides real-time performance and also ensures important time-alignment for all information collected from the CAN network.

Griffiths was first introduced to Kvaser products by ATI UK's Business Manager Umesh Patel several years ago. ATI includes Kvaser in its portfolio to complement its line of tools for any application requiring access to the CAN bus via a PC. ATI selected the well-established Kvaser products to provide

competitively priced, easy to use, flexible solutions for network interfacing with its VISION or CANLab Software. Needing to calibrate Electronic Control Units (ECUs) from different manufacturers that all used the common protocol CAN CCP, Ford was able to standardise on ATI VISION Software and Kvaser CAN interfaces to accommodate this diversity.

Griffiths initially required a rugged CAN interface that could cope with the daily demands of in-the-field testing at Dunton, and would also be compatible with the ATI VISION software. Griffiths took delivery of numerous Kvaser USBcan Rugged interfaces, which were duly put to use in various test situations, including Dunton's dyno cells and test track. Since that first delivery, ATI and Kvaser have gained a solid reputation among Ford Dunton's design and calibration engineers, and Ford Dunton subsequently became one of the first customers to use Kvaser's Leaf Light. Now the most common Kvaser interface product used at Ford Dunton, Griffiths says: "Leaf Light is highly favoured by the engineering and development teams due its versatility and physical attributes. The tool is light, compact, powered from the USB and represents a cost-effective CAN interface." Whilst the specification of the Leaf Light is lower than some other Kvaser interface products and isn't qualified for operation in extreme temperatures, for the value Griffiths notes that if the temperature goes below zero, he recommends that engineers just carry it in their pocket!

Other software and hardware interfaces from the ATI/Kvaser partnership in use at Dunton include ATI CANverter and Kvaser CANKing, Memorator, LapCan and Leaf LIN. The recently added CANLab, ATI's multi-bus network analysis and development tool, uses the exact same interface so no additional hardware costs were incurred. Concludes Griffiths: "Our investment in Kvaser products has proven to be a wise decision. Ford will continue to monitor the development of ATI and Kvaser products with great enthusiasm, and we have high expectations of future products."



**Umesh Patel (ATI UK), Klas Sehlstedt (Kvaser) and Trevor Griffiths (Ford Dunton)**