

Airborne data logging system



Challenge – Designing an airworthy embedded computer

An aviation system manufacturer requested assistance with the design of an embedded computer system for a data-logging application. The customer was considering using a specific form-factor. When our engineers started to discuss the applications with the customer, it soon became clear that the proposed form-factor was not suitable for the application, and the proposed sensing architecture, whilst suitable, was not necessarily the best in terms of lowest weight and highest performance.

Acal BFi solution

We worked with the customer to identify a suitable airborne computing platform and suggested that rather than having a central data-gathering point, a distributed architecture would be more suitable. We proposed a solution that was based on the North Atlantic Industries sensor interface unit (SIU) with an integral ARM-based, single-board computer (SBC) connected via Ethernet. The solution was adopted as it offered a much simpler installation and saved on wiring.

Due to the nature of the system, specific drivers had to be developed to allow the company's existing software to read/write the data over the Ethernet, so we developed these as part of a board support package.

Services provided

- System specification
- System design and Integration
- System documentation
- Software driver API documentation
- Software driver development
- Pre-compliance testing