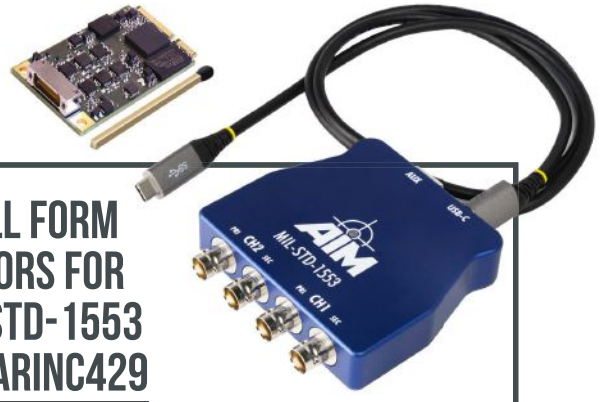

SMALL FORM FACTORS FOR MIL-STD-1553 AND ARINC429

They say good things come in small packages. By using the latest technology, both SoC (System on a Chip) and FPGA with integrated Software Cores it is now possible to shrink electronic designs in terms of silicon to manufacture very small and portable solutions. One industry standard small form factor, PCI Mini Express, has become very popular with manufacturers of small rugged computers, laptops and tablets. These host PC platforms can also host external devices via the USB-C interface.

For avionics test and simulation and embedded applications, taking existing functions and features of current designs over to new small form factors and to create small portable devices is highly desirable.

Two such cases in hand have been already implemented successfully. The first is a dual stream, dual redundant USB to MIL-STD-1553 interface known as a SmartCable for highly portable applications that integrates the feature set of larger form factor modules. The USB-C power capabilities of the ASC1553-2 guarantees 100% 1553 bus load generation on two streams concurrently.

The second is a PCI Express Mini Card for ARINC429 with up to 12 channels designed for rugged embedded applications or in fact test and simulation if the available configuration options would be included. In conclusion, the technologies implemented for both cases allows compatibility with existing designs and offers software compatibility with common programming models including that of use with the AIM PBA.pro databus test and analysis software. This proves to be a big advantage with both avionics databus test and simulation and embedded applications giving the customer the advantage of full compatibility moving forward. \\