

## CompactPCI soaring high in the avionics industry



*By John Gerngross, President*

This past year, CompactPCI has continued to make strong inroads into the commercial and military aerospace markets, both longtime users of reliable but aging and expensive solutions such as VME and VXI. Both industries have continued to move to smaller, lighter, and more powerful CompactPCI boards to equip their embedded, maintenance, and test stands. The demand is now soaring.

CompactPCI system manufacturers have long seen avionics as an ideal candidate for their boards. These systems take up far less of the precious physical space available aboard aircraft than other competing technologies. In addition, they have enough I/O density for most in-flight computing applications and are physically able to handle the demands of flight and heavy processing workloads without damage or overheating. Perhaps most importantly, CompactPCI boards cost less than their VME, VXI, and custom backplane counterparts.

In 2004, CompactPCI is now firmly established on avionics radar as a viable solution for their next generation of designs. Many avionics makers spent part of last year reviewing test stands, flight recorders, launch systems, and other onboard designs, working up proposed improvements as they do every 5-10 years. With their substantial I/O capacity, ruggedness, and small, light form-factor, the new breed of 3U-format CompactPCI boards has become highly attractive. Also, there are enough Commercial Off-the-Shelf (COTS) CompactPCI prod-

ucts available to make development of almost any imaginable in-flight solution much more feasible than it had been in the past. Additionally, with expanded requirements from the Department of Defense, many manufacturers are faced with increased demand for military aircraft sensors, onboard displays, counter measures, and other systems. It seems highly likely that CompactPCI has a bright future in onboard military aircraft computing.

The commercial avionics community couldn't have discovered CompactPCI, and 3U CompactPCI in particular, at a better time. The public's always increasing demand for electronic communications and entertainment has led recently to a slew of bandwidth-hungry services on planes, such as personal viewing monitors, moving maps, air phones, and video games. And more services are on the way, like in-flight cell-phone service and satellite-based Internet access. As the innovations of avionics engineers continue to push technical boundaries, the aircraft themselves will still face the same demanding physical restrictions, including space and heat-dissipation capabilities. High-density I/O 3U CompactPCI products are the perfect solution to this challenge.

### CompactPCI boards the plane

Flight recorders, in-house testing systems, and other applications are moving from their old technologies to 3U CompactPCI. While commercial aircraft manufacturers are adopting CompactPCI for communications and entertainment

applications, military aircraft makers are developing new sensor systems with CompactPCI as well as using the technology to find less costly ways of integrating new systems with legacy systems. Additionally, the avionics development and testing community sees CompactPCI as a low-cost, more portable solution for its test stands.

In 2005, look for increasing demand for 3U CompactPCI solutions throughout the avionics industry, as avionics engineers build more in-flight applications with this technology. Condor Engineering, which has been at the forefront of CompactPCI innovation for avionics, intends to meet this demand by designing more COTS rugged products with increased I/O density. We will continue to provide innovative and reliable products through research, development, and stringent quality control. One such solution is our new QCP product, a 3U CompactPCI board available in convection- and conductively cooled versions with up to four dual-redundant 1553 interfaces and eighteen 28v input/output discretes. It has been well received by an industry that demands the highest quality products.

Thanks to a broad range of design wins, CompactPCI boards will certainly be logging a lot of frequent flyer miles in 2005.

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