

**Alta**dt  
data technologies

Top Solutions Provider for  
MIL-STD-1553 & ARINC Products



**TOP  
AVIATION  
SOLUTIONS  
PROVIDER  
2022**

AWARDED BY  
**AEROSPACE**  
& DEFENSE **REVIEW**

Alta Data  
Technologies, LLC

**3<sup>rd</sup> Year In A Row!**

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# Alta Data Technologies, LLC

## Advanced 1553 and ARINC Open Market System Solutions for Aerospace Customers

**F**rom inception in 2007, Alta Data Technologies (Alta) has grown to be a leading supplier of MIL-STD-1553 and ARINC connectivity products. With over 60,000 items shipped, Alta has proven to be one the Aerospace industry's key technology drivers, and their wide-array of interface cards and real-time appliances has aids other companies to offer smaller, higher performance avionics systems at dramatically lower costs.

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An example of new high performance avionics systems are product offerings from Systems Integration Plus (SIP) of Scottsdale, Arizona. Formed in 1988 as a full-service systems integrator specializing in configuring COTS computer equipment. SIP's expertise quickly broadened to include, and later showcase, installation and configuration of popular RTOS operating systems. By the mid-1990's SIP added software engineering capability to develop device drivers, firmware, middleware, applications, and graphical user interfaces.

Today, SIP is a leader in COTS electronic packaging and software design bolstering its roots in system integration. Recent major system wins have included Alta's interface cards, which helped expand SIP's market reach, and win

some large avionics projects. Gunnar Buzzard, CEO of SIP, comments “We bring multiple technologies, vendors and innovative design practices as a system solution for the customer base. This includes modified COTS, or changing that last 10 percent of a COTS design, to meet specific customer needs while maintaining a strong hold on the support, logistical and long-term cost savings of a COTS based solution.



“For many applications in the defense market, 1553 and ARINC interfaces are required. In 2018 we launched our HAWKEYE and GREYHOUND rugged computers with Alta as our databus solutions partner. Together we identified and planned products based on Small Form Factor (SFF) designs to minimize cost with the most technically advanced solutions. This type of technical and marketing partnership is a key factor in our success. We're excited about Alta's new MEZ-E1553 Ethernet mezzanine micro-card that will allow us to offer quick design turns for 1553 systems based on the latest Intel i7-i9 and Atom processors. Their new MACsec Ethernet products will, once again, be industry leading interfaces.”

Jake Haddock, CTO of Alta states, “Our products target the COTS or modified COTS integrator to provide the most flexible avionics network options to their end-use customer. When we first saw SIP’s strategy, we recognized the potential synergies between our companies. Our Mini PCI Express, XMC and PMC boards, along with our real-time Ethernet converters, compliments SIPs’ modified COTS strategy. Their designs enable the customer to buy a lower cost, lab-grade system for prototype or development, and then directly migrate to a fully MIL qualified rugged, deployed system with little to no changes. All with quick delivery in weeks—not months. This is a significant technical, cost and time risk reduction for programs.”

At look at recent systems shipped by SIP include a rugged support computer for the C-17, and an even smaller, avionics mission computer for the AC-130 Gunship, MC-130 and F-16 platforms. For the C-17 system, SIP used their Hawkeye (pictured) system with Intel i7 processor, two Alta XMC MIL-STD-1553 and ARINC interface cards, and other COTS serial mini PCI Express modules to produce a system that was smaller, much more powerful, and about 30% less cost. The customer began development with the lab grade system, and then seamlessly moved to the full MIL rugged systems. For the C-130 and F-16 projects, SIP has shipped their full MIL grade Greyhound (about half size of the Hawkeye), mini system with Alta mini PCI Express 1553 cards, which are about half the size of a match book. SIP has already shipped 100s of these systems, with significant orders to follow.

SIP systems can be tailored with various multi-core processors, multiple Ethernet 1G and 10G ports (copper or fibre), extended temperature solid state memory, RS-232/422/485 and USB ports, digital discrettes, 3G-SDI video, removable storage, UPS battery, and custom I/O from DB to 38999s connectors, etc.

Another new Alta product provides even more flexible avionics design solutions. The MEZ-E1553 mezzanine card has multiple 1553 channels (and soon Enhanced Bit Rate 1553 - EBR) with an Ethernet backplane on a mini PCI Express size card. There are several advantages for a customer to select an Ethernet connection over a PCI

Express or USB. First, is the portability of development applications to almost any operating system (OS), or further OS revisions. As almost every OS has Ethernet “socket” drivers built-in, where PCI Express and USB devices require custom device drivers that can go obsolete, or not be portable between OSes.

The second advantage is the ease of designing an Ethernet connection with almost any FPGA or processor design kit. These technologies almost always include reference designs and direct Ethernet support. Alta offers a MEZ-E1553 reference card with Ethernet, USB power, and design schematics that can connect to any computer system for software development and hardware verification.

The portability and simplicity of Alta’s 1553 and Ethernet protocol engines, along with their modular, abstracted software development kit (or API) allows the customer to use their same application code across all of Alta’s product line—often without any code changes. This includes applications developed on PCI or PCI Express cards that can run directly on their Ethernet ENET, NLINE and MEZ-E1553 products, often without recompiling (actually run the same, raw executable between all products).

Alta’s next generation of 1553-Ethernet products will incorporate IEEE-802.11ae standards for secure, highly reliable, deterministic latency links. Alta plans to release various ENET and NLINE (1553 and ARINC electronics built directly in rugged cable assemblies) products with MACsec technology to address the obvious needs to provide a cyber secure connection between the computers an ENET end-point device. MACsec provides an encrypted link between end-point devices and switches, making physical intrusions virtually impossible. The first

ENET products with MACsec will release towards Q3 2022.

Alta products includes an industry leading 5-year limited warranty, and software updates are provided at no-cost for life. Products typically ship within 2-3 weeks, even during the recent supply chain turmoil when many vendors had to push shipments out weeks or months. With over \$175M in total sales, a record 2021 of \$20M in sales, and new advanced product releases, Alta is poised to continue their market and technology leadership for years to come. 



FOR IMMEDIATE RELEASE

**Contact:**

Alta Data Technologies, LLC  
Harry Wild  
alta.sales@altadt.com  
www.altadt.com  
Tel: 505-994-3111 x1

**Alta Data Technologies Recognized as a Top Supplier by Aerospace & Defense Review for Third Straight Year**

**Growth Through Innovation and Quality of MIL-STD-1553 and ARINC Products**

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**Rio Rancho, NM (September 13, 2022)** - Alta Data Technologies, LLC (Alta) is excited to announce that [Aerospace & Defense Review](#) selected Alta as a top ten aerospace provider for the third straight year. This [prestigious award](#) recognizes Alta's growth, innovation and quality in providing industry leading [MIL-STD-1553](#) and [ARINC](#) commercial off the shelf (COTS) [products](#). The review documents why Alta has become one of the largest, most trusted 1553 and ARINC providers with an example of dedication to its' customers.

"We have been quite impressed by Alta's, expertise in providing efficient and innovative aviation solutions," said Jonathan Allred, Managing Editor of Aerospace & Defense Review magazine. " We congratulate Alta on this prestigious recognition and look forward to seeing their impressive growth streak continue."

"This recognition is such a privilege and we thank Aerospace & Defense Review for the honor. This award demonstrates our entire teams' commitment to provide the very best product and services in the 1553 and ARINC market. Even though we have grown to be one of the largest suppliers in our market niche, we've never forgotten our first customers that believed in our goal to bring fresh, innovative products and services to the industry. By offering the only 3<sup>rd</sup> generation, packet off-loading protocol engines, along with our leading manufacturing practices, we've been able to grow and keep a personal support promise for all customers – backed-up with an industry leading 5-year warranty," states Richard Schuh, CEO and co-founder of Alta.

Schuh continues, "But we haven't rested on the 60,000+ items shipped and over \$175M in sales! We have some exciting new products in the pipeline that will soon release, including a new, advance cryptographic capability for the Ethernet host interface of our [ENET](#) product line. For the first time in our industry, customers will be able to seamlessly have AES256 level hardware encryption for the host control to 1553 and ARINC networks. This will be ideal for embedded, deployed, and even lab 1553 and ARINC requirements."

**About Alta Data Technologies**

Alta is a rapidly growing, private company that provides industry leading COTS avionics interface products. Alta's products are offered in high-density channel counts and Ethernet configurations, IRIG Time Code Decoder, Triggers, Discretets and the advanced AltaAPI and SAE AS4111 5.2 AltaRTVal™ software packages. Advanced [1553 and ARINC products](#) for PCI Express, PMC, XMC for various computer systems such as VPX, VME, cPCI/PXI, PXIe, Mini PCI Express. Operating system platforms include MS Windows, National Instruments' LabVIEW & Real-Time, Wind River's VxWorks, Green Hills Software' Integrity, and Linux. Trademarks are property of their respective owners and Thunderbolt is a trademark of Intel. [www.altadt.com](http://www.altadt.com)