Airborne Mission Management Systems

The U. S. DoD and its Allies are under increasing pressure to be able to be more flexible in how they can defeat a constantly changing enemy. The ability to rapidly update systems to respond to the latest threats from the enemy demands shorter timeframes to field new capabilities by minimizing program lead time, and reducing the system integrator's risk. A mission management computer provides a scalable and flexible capability to handle all of the ever changing mission tasks a platform may encounter (see Figure 1).

Deploy Faster with Complete Integrated Mission Management Systems

Curtiss-Wright Defense Solutions is a long-established technology leader in the development of rugged electronic components and systems for aerospace and defense applications. Serving as a technology and integration partner to its customers, Curtiss-Wright provides a full range of advanced, highly engineered, scalable solutions that adhere to open systems architectures leveraging the standards of OpenVPX. We support the various DoD initiatives such as FACE, HOST, and OMS.

When your program requires Line Replaceable Units (LRU) that conform to decreasing size, weight, power and cost (SWaP-C) allocations and you need to get from development to deployment as quickly as possible, Curtiss-Wright delivers fully developed systems complete with software tools and analysis documentation to help you get to deployment faster.

- Integrated Development Systems of proven, pre-configured COTS modules pre-installed in a lab/demonstration chassis, with a 4-8 week lead time
- Rugged Integrated Multi-Platform Modular Computer (MPMC) systems supported by software tools and analysis. We support a variety of OSs including VxWorks, INTEGRITY, Red Hat Enterprise Linux (RHEL), LynxOS, PikeOS and others.
- System Built-In Test (BIT) Software pre-tested and verified for complex, high-performance requirements
- Test Infrastructure that shortens development cycles, increases test coverage, and verifies hardware performance under high levels of simultaneous usage
- Program-specific system design, engineering, integration, program management and support services to expedite delivery of a deployable solution.
- Documentation available to support early deployment such as; Failure Modes and Effects Analysis (FMEA) report, Thermal report, Design Verification Test (DVT) report and more.

These solutions make it easier to deploy field-ready LRUs that provide more functionality in a reduced footprint.

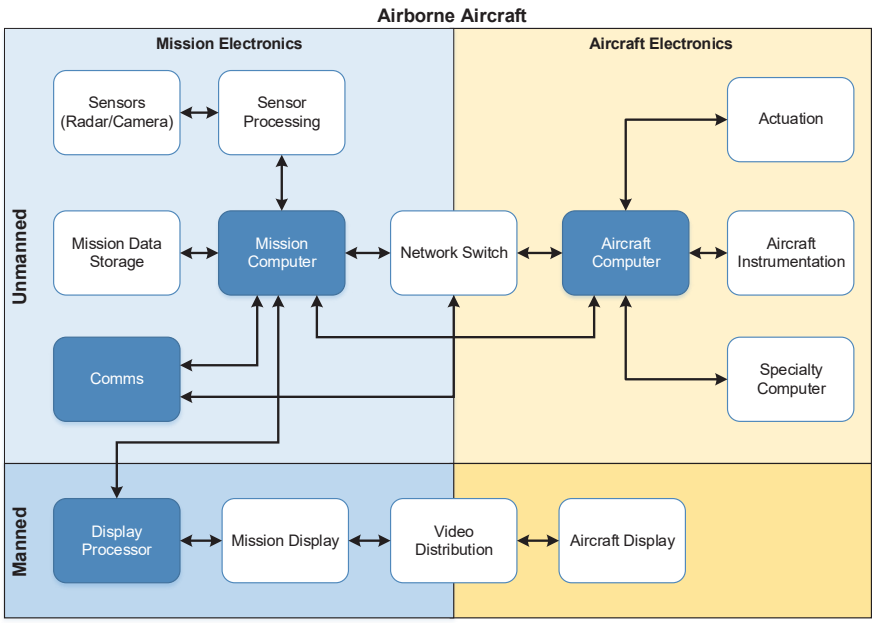

Figure 1: Mission Management Systems in Mission and Vehicle Electronics

Proven COTS Technology Building Blocks

Our mission management systems are built on a wide range of proven COTS OpenVPX building blocks that create a quick-turn infrastructure you can rely on. Our system architects work with the customer to mix and match from a range of COTS boards and packaging options to create a complete integrated solution that meets your program needs. Our subsystems provide higher levels of performance, reduce power consumption, and limit unit count — all critical attributes for rugged systems deployed in space limited environments.

Curtiss-Wright uniquely supports, and has developed expertise, in the widest range of critical technologies required by today's most demanding military applications. Through leadership in standards bodies, research and adoption of new technologies, Curtiss-Wright has the experience and expertise to mitigate challenges in:

- Packaging for ruggedization in airborne applications including compliance to MIL-STD-xxxxx standards, thermal management, ruggedization, signal integrity optimization, and structural analysis
- Open Architectures including OpenVPX, Modular Open Radio Frequency Architecture (MORA), Future Airborne Capability Environment (FACE™), FMC, and XMC
- Reliability of Electronics
- Trusted / Secure Computing including anti-tamper, information assurance, trusted processes and trusted suppliers
- Roadmaps for technology readiness and obsolescence mitigation

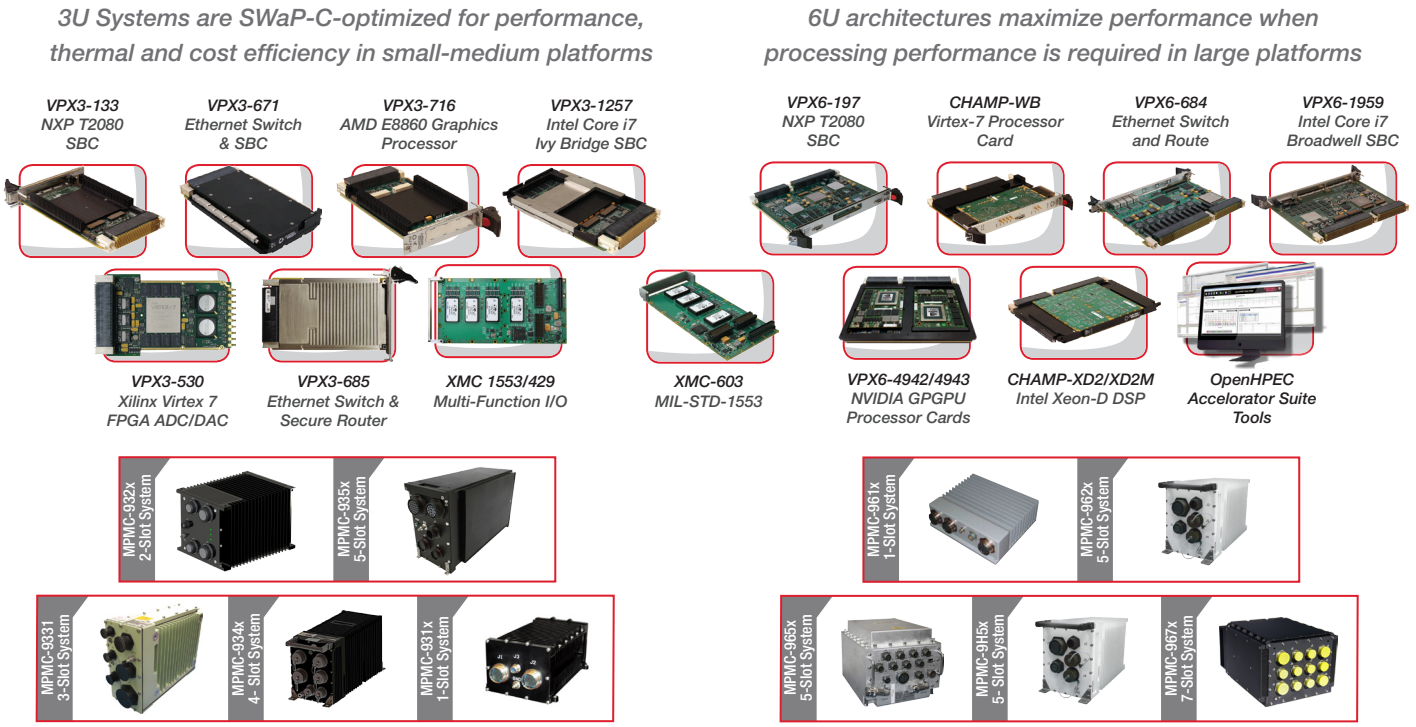

Figure 2: Curtiss-Wright COTS Building Blocks and Integrated Systems

Leverage Pre-Architectured Designs

To decrease development time, our portfolio of systems includes pre-engineered architecture designs that can be easily integrated into any standards-based system. Below are examples of the powerful solutions that can be created with Curtiss-Wright products.

Examples of Pre-Architected Mission Computers based on Platform-sizes

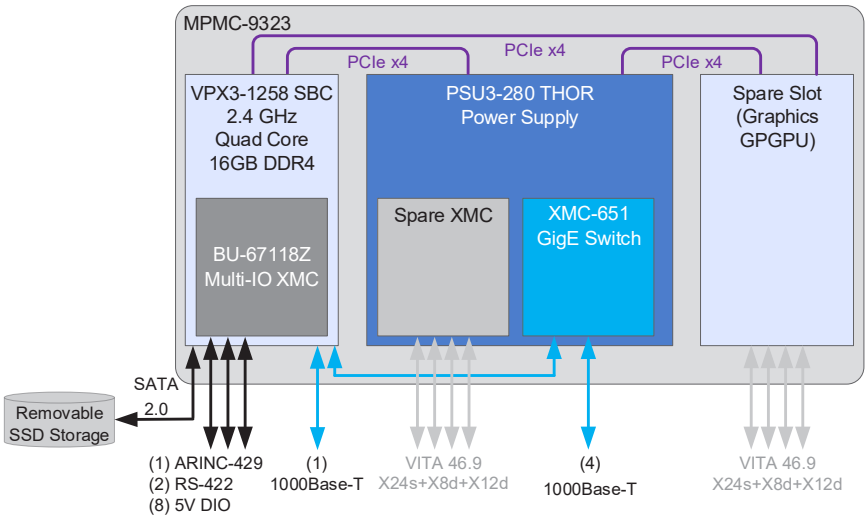

Figure 3: 2-slot 3U VPX Mission Computer for UAV/UASs

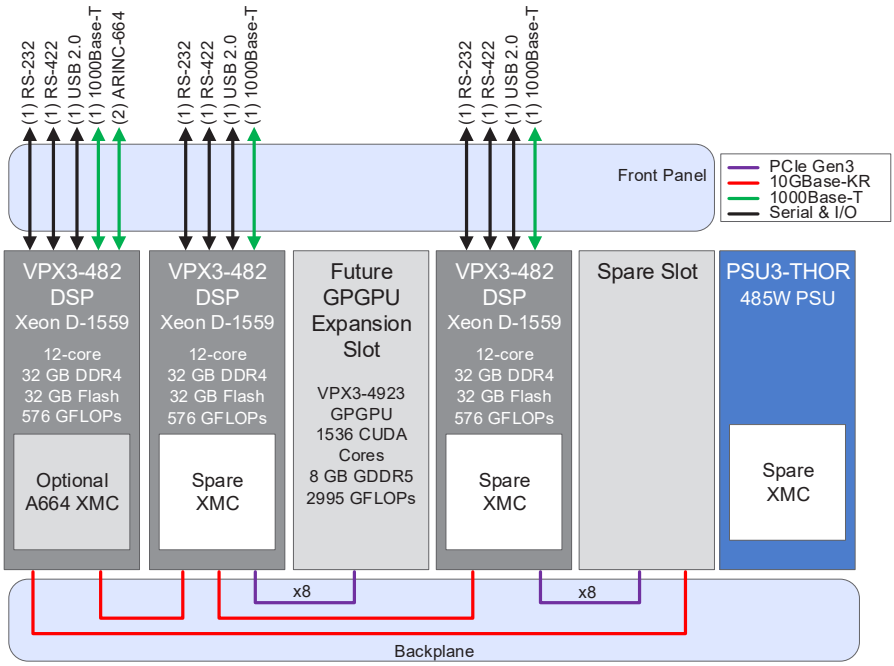

Figure 4: 5-slot 3U VPX Mission Computer for Medium to Large Helicopters and Aircraft

Curtiss-Wright Understands Your System Requirements

With more than 20 years of experience in providing rugged computing and avionics solutions for the aerospace and defense industries, Curtiss-Wright has developed system solutions currently deployed in military and commercial rotorcraft, manned xed wing, and unmanned aerial vehicles The following platforms represent some of the applications Curtiss-Wright has equipped.

Rotorcraft (Military and Commercial)

Unmanned Aerial Vehicles

Manned Fixed Wing Aircraft

Learn More

Download these white papers

- Eliminating Design Risk from the System Integration Equation
- Speeding up Design Verification Testing of VPX Systems
- Reducing Development Cycles for 3U VPX Systems
- 6U to 3U System Migration
- Thinking Outside the Box: Optimizing System Design with Embedded Expertise

More resources

- 3U Modular Computers
- 6U Modular Computers
- Program Specific Systems
- System Design, Engineering & Integration Services
- Program Management Capabilities