VETRONICS SOLUTIONS

CURTISS-WRIGHT

CURTISSWRIGHTDS.COM

TRUSTED
PROVEN
LEADER

LAND AIR SEA

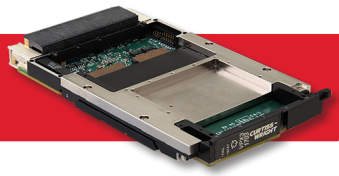
CURTISS-WRIGHT DEFENSE SOLUTIONS

Curtiss-Wright Defense Solutions, a division of Curtiss-Wright Corporation, is an industry-leading supplier of sophisticated electronics products to the defense and aerospace industries. Globally recognized as one of the most innovative designers and manufacturers of highly engineered systems built to perform reliably in harsh conditions, we lead the way in advanced solution development that addresses the rapidly evolving requirements of our ground defense customers. With design and manufacturing facilities located across North America and Europe, and sales and support teams located around the globe, we are uniquely positioned to satisfy the most demanding electronics, packaging, and systems challenges.

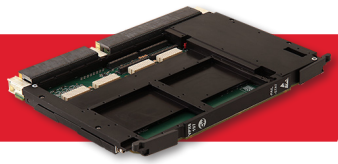
For over 80 years we have designed, developed, and delivered systems and components that ensure ground vehicles have the technical edge in today's battlefield. Our product and capability range extends from in-vehicle networking, mission computing, video management and distribution, and fire control processing, to complete turret drive stabilization and ammunition handling systems. We play a key industry role in the establishment of resources and services to ensure that our customers have access to the long life cycle support required by today's defense programs and offer comprehensive approaches for mitigating obsolescence, blocking the use of counterfeit parts, and developing product road maps to ease the integration of future generations of technologies. With technology innovations that are on hundreds of platforms worldwide, our focus on quality and reliability has enabled us to significantly reduce program risk for thousands of customers and countless programs over several decades.

VPX3-1260
3U VPX INTEL® 8th GEN XEON® SBC

VPX3-1703
3U ARM® SBC



VPX6-197
6U VPX POWER ARCHITECTURE® SBC



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REDUCING PROGRAM RISK, COST AND TIME TO MARKET

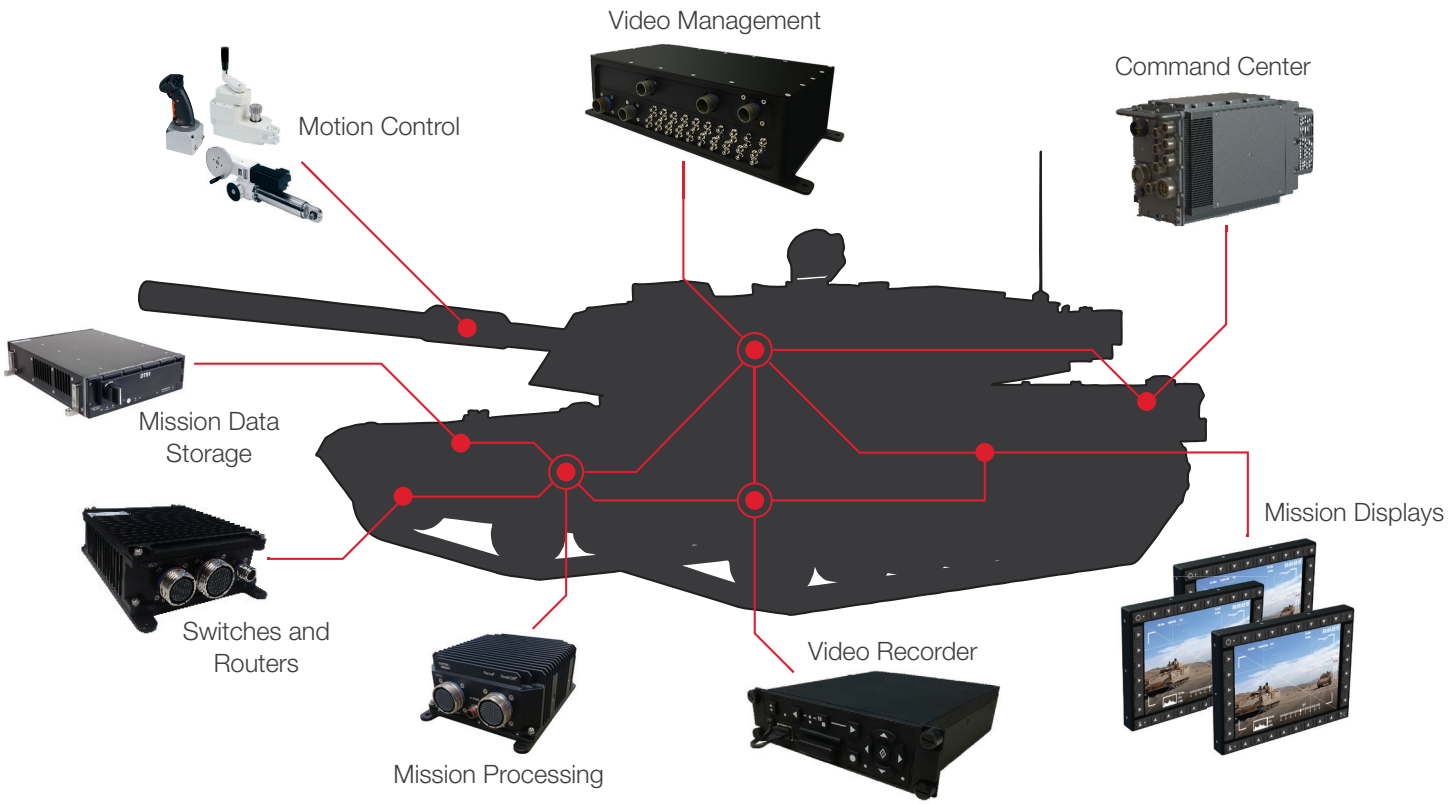
Tap into a broad portfolio of rugged commercial off-the-shelf (COTS) cards and subsystems, as well as program-specific solutions that reduce risk, time, and cost when developing solutions for ground vehicles. Our modular, open standards-based products for military applications give you cost and tactical advantages through our holistic approach to solution development, balancing advanced technologies, program requirements, and cost constraints. Our mission is to always deliver on time, on spec, and on budget.

Our standards-based COTS modules provide a simplified way to:

- Rapidly deploy COTS in extreme locations with solutions that can withstand extreme temperatures, sand, dust, water, rugged terrain, and high altitudes
- Increase safety with detailed reliability documentation, maintenance requirements, and safety considerations that provide insight into scheduling part replacement
- Protect against cyber and physical attacks with our TrustedCOTS™ products that are built with Trusted Computing technologies and techniques incorporated into every aspect of solution development, from design and testing to supply chain and manufacturing. This comprehensive, end-to-end approach creates an effective mesh of protection layers that integrate to ensure reliability of Curtiss-Wright products in the face of attempted compromise
- Extend product lifetime with dependable, error-resistant system operations throughout your solution's lifetime, achieved through test analysis best practices

Many of our solutions follow a complete program life cycle predictability chart that minimizes total cost of ownership (TCO) and ensures parts and repair services are available as long as the solution is in the field, enabling you to confidently deploy systems for up to 25 years.

YOUR TOTAL VETRONICS SOLUTIONS PARTNER



MODIFIED COTS (MCOTS) FOR TAILORED SOLUTIONS

For programs with unique requirements, Curtiss-Wright's MCOTS program delivers cost-effective tailored solutions. The MCOTS approach, applied at the module or subsystem level, leverages existing IP investment and COTS development infrastructure, and is proven to save up to 60% of project costs when compared to new, custom-built designs. Additionally, because COTS-based application development can start right away using existing technology, this approach can also save four to eight months of overall development time.

PACKAGED COTS (PCOTS)

Curtiss-Wright also offers system integration – taking COTS modules and integrating them into existing or customized rugged enclosures with tailored features and connectivity which are qualified to customer-specified environmental requirements all done under the auspices of an AS9100-D organization. As well as Curtiss-Wright COTS products, PCOTS systems can also include third-party or customer-furnished modules and, if functionality isn't available off the shelf, it can be designed during system development.

Curtiss-Wright's extensive experience minimizes the risk and associated cost of system integration and qualification. We have a portfolio of PCOTS systems which may be close enough to use as-is or to use as a starting point for a tailored solution, for example the Generic Vehicle Architecture (GVA)-compliant cold-plate cooled enclosure shown opposite, supports the latest Intel processor SBCs with NVIDIA® GPGPUs for image processing/targeting or Xilinx® FPGAs for mobile RADAR.

MPMC-9335
3U VPX SIGNAL/IMAGE
PROCESSING SYSTEM

VIDEO MANAGEMENT AND MISSION DISPLAYS

A growing challenge for system integrators is getting the most effective use out of the proliferating number of deployed cameras and displays without adding weight and taking up space in an already constrained environment. Device interoperability, harsh environmental conditions, and rigorous qualification testing add to this challenge. While the obstacles can be daunting, choosing the right video management solution can reduce risk, time to market, and program cost. The Rugged Video Gateway (RVG) line of small form factor video management solutions (which includes analog and digital video switches, gateways, multiplexers, and format converters) is designed specifically to address these challenges. The modularity of the RVG line enables the devices to be mixed and matched based on platform requirements, then stacked, offering a flexible integration solution.

Displays with ever increasing inputs, digital and analog switching, and recording equipment that can handle all of today's image formats are absolutely necessary components of a modern Video Management System (VMS). Other key components include:

- Operator defined display configuration at a touch of a button
- High-quality format conversion that offers an image in the correct format required by a system, with minimal impact on the image quality
- Low-latency, multi-sensor video processing and distribution
- High-definition video recording for training, debrief, or evidential purposes
- Products that fit into ground vehicle open standards infrastructure such as GVA or VICTORY

VRDV7000
VIDEO RECORDER

GVDU
MISSION DISPLAY

RGV-MS1
MULTI-SENSOR VIDEO
GATEWAY

DURACOR® 8043 RUGGED MODULAR MISSION COMPUTER

DURANET® 20-11 SWITCH

With a portfolio of building blocks that leverage decades of experience in rugged video system design and development, Curtiss-Wright's video management products help you carry more, go further, and stay in the mission longer while reducing integration headaches between legacy and new video equipment. The use of off-the-shelf systems that have been pre-qualified to military standards of ruggedization, as well as working with a proven, trusted leader that can provide the necessary expertise to ensure system interoperability, significantly reduces time to market, risk, and program cost. Designed for users of modern, multi-sensor systems Curtiss-Wright VMSs reduce cabling, redundant equipment, and operator overhead.

MISSION PROCESSING AND NETWORKING

Curtiss-Wright rugged switches and routers enable mobile networks on-board vehicle and aircraft platforms to securely and affordably deploy digital network architectures for situational awareness and network-centric operations. These rugged subsystems and card solutions give systems integrators capabilities for interconnecting cards, sensors and processors through switched Ethernet links. Additionally, some of these robust IP networking solutions can support both copper and fiber cabling, Power over Ethernet, and advanced in-vehicle and airborne LAN switching/WAN routing requirements.

Curtiss-Wright also offers board- and system-level solutions for mission computing. For example, the rugged COTS mission computer subsystems in the Parvus® DuraCOR product line feature modular, expandable designs with powerful graphics and data processing capabilities, engineered with ultra-reliable mechanical robustness to address size, weight, power, and cost (SWaP-C) constraints, these subsystems are designed to meet budget requirements and allow for fully functional, environmentally-hardened deployments within weeks. Parvus systems are specifically designed with modularity in mind, featuring built-in mechanical scalability and I/O expansion to transform a general purpose system into a tailored solution.

DATA STORAGE, RECORDING, AND ENCRYPTION

Increasing data demands on-board todays platforms are driving the development of faster, more flexible, more compact, and lower cost data recording and storage solutions that can protect sensitive data. Our data storage solutions are rugged, removable storage systems that use the latest in solid state media technology to provide reliable, secure data storage. Designed for use in deployed, harsh environments, they have been proven to operate reliably in the most extreme conditions encountered on-board today's military vehicles. Providing flexibility and scalability over the life of the program and therefore reducing program risks and costs, our data storage solutions offer legacy sensor interoperability, Gigabyte and Terabyte capacities, high insertion cycle connectors, and advanced encryption capabilities.

Ground vehicles operating in harsh environments can deliver harmful 'dirty power' that can damage sensitive vetronics systems with power surges and spikes. The Data Transport System (DTS1) Network Attached Storage (NAS) device is the embedded industry's first COTS data-at-rest (DAR) storage solution to support two layers of full disk encryption (FDE) in a single device and MIL-STD-1275, ("Characteristics of 28 Volt DC Electrical Systems in Military Vehicles"), the US Department of Defense standard that defines protection against damaging high voltage spikes and long voltage surges from ground vehicle power supplies. The DTS1 is the only US and internationally recognized Common Criteria certified NAS solution with a MIL-STD-1275 compliant filter. Compliance with MIL-STD-1275 ensures system integrators that the DTS1 can be used dependably in deployed land vehicle applications.

Whether your application requires network attached storage (NAS), direct attached storage (DAS) or storage area network (SAN) solutions, Curtiss-Wright delivers cost-effective, proven, and certified COTS storage solutions that match various data security requirements, including National Security Agency (NSA) Type 1, NSA Commercial Solutions for Classified (CSfC), Common Criteria (CC), and FIPS 140-2.

DTS1
DATA STORAGE

MOTION CONTROL

The self-protection of deployed troops depends on the precision and reliability of their armament. Weapons accuracy and reliability are crucial factors for combat success. Today's turret is typically mounted on an armored land vehicle that's most useful when traversing rugged, harsh terrain. The ability to accurately locate a target and stabilize the shot while moving out of the line of site could make all the difference.

Developed from over 60 years of industry experience, the Turret Drive Servo System (TDSS) is based on a modular equipment system approach and suits a range of applications from weapon stations to main battle tanks with turrets up to 20 tons. A typical TDSS consists of linear and rotary drives, a motor controller, single and dual axis gyroscopes, hand controllers and integrated software. Depending on the size and weight of the turret, the system can be pared down or scaled up to meet the performance and precision requirements.

Off-the-shelf, the TDSS is a modular, upgradable system that has three standard levels of functionality where turret control and/or stabilization increase with each level. Additionally, each level includes customization options to incrementally increase stabilization accuracy, ensuring system upgradability.

Rotary Gear Drives | Linear Gear Drives | Motor Controllers | Hand Controllers | Gyroscopes | Software

TOTAL LIFECYCLE MANAGEMENT

Today's programs demand longer lifecycles for defence equipment, despite the rapid rate at which technology is evolving. Declining defence spending over the last decade has caused the average age of military systems to increase. What's more, forecasting future needs is becoming increasingly difficult, making diminishing manufacturing sources and out-of-production parts a greater challenge for defence departments.

Curtiss-Wright reduces the risk of obsolescence and uncertainty with its industry-leading Total LifeCycle Management™ (TLCM) program, which offers unprecedented visibility into program technology. With a user-friendly portal that places key information at your fingertips, TLCM optimizes program costs with a blended approach to COTS longevity that balances technology insertion and inventory investment to provide a proactive method tailored to your specific needs.

Total LifeCycle Management

AL *Dedicated Curtiss-Wright care team, including a team of lifecycle experts*

Custom industry-leading TLCM platform

Free on-site component storage

Component Health Analysis

AL *Obsolescence reporting on semiconductor devices*

Forward-looking availability predictions

Risk mitigation strategies for DMS parts

Test Infrastructure Investments

L *Test hardware maintenance*

Procurement of test item (cables, jigs, test cards, etc.)

Operator training

Active equipment maintenance

Product Configuration Controls

AL *Fit, form, function DMS replacements*

Operational enhancements

Non fit, form, function DMS solutions

Service Notifications

AL *Early Alert LTB notification*

LTB component quotations

Service renewals

Push email system for services portal

TLCM Partnerships

A *Have an active voice in change approval*

Make calculated risk assessments in order to secure forecasts

Reduce cost and risk of supply with early identification

Increase operational readiness

L *Common goal to support a fixed forecast or fielded units*

Extension of your program with the preferred COTS vendor

LTB parts buys sustain a fixed configuration

A = for Active Programs
L = for Longevity Programs

THE CURTISS-WRIGHT ADVANTAGE

From design to program management and lifecycle services, Curtiss-Wright has all the necessary technical and managerial resources required to design, build, test, deliver and support defence programs globally.

We provide the program resources and facilities required for the design, qualification, support, and sustainment of the product, including the production of fully qualified hardware.

With experience in tackling challenging integration schedules and meeting customer budgetary commitments, Curtiss-Wright is ready and uniquely positioned to support your needs throughout your entire program, no matter what tomorrow brings. As your vetronics trusted proven leader, Curtiss-Wright will reduce your program risk by delivering on-time, on-budget and on-spec.

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