CURTISS-WRIGHT

COTS Boards

Faster, Smarter & Stronger Embedded Computing

Trusted. Proven. Leader.

curtisswrightds.com

Index

Trusted on thousands of **programs**

Proven safe and secure

Leaders in innovation **since 1903**

Curtiss-Wright Defense Solutions

Missions require reliable technology to power platforms, whether in the air, on the ground, at sea or in space. Each card, subsystem, and system on every platform must be able to perform optimally in harsh environments, last for the entire duration of the platform, and protect critical data to ensure mission success and overall safety.

With over 9 decades of experience designing and manufacturing high-performance defense solutions, Curtiss-Wright leads the industry in developing, testing, validating, and supporting electronics to ensure rugged, reliable, secure, and safe performance.

Curtiss-Wright's broad selection of rugged open-architecture COTS embedded computing solutions excel at processing data in real-time to support mission-critical functions. Field-proven, highly engineered, and manufactured to the most stringent quality standards, Curtiss-Wright's COTS boards leverage our unmatched experience and expertise to reduce program cost, development time, and overall risk.

The Defense Solutions Advantage

As a technological leader in providing COTS products and open architecture solutions for the complete range of deployable applications, including mission computing, signal processing, graphics, communication fabrics, system and sensing I/O, and data storage, Curtiss-Wright's rugged and ultra-rugged solutions allow customers to speed time to market and ease system integration for ground, airborne, naval, and space platforms.

Curtiss-Wright is a leading contributor to defining and advancing key industry open standards, including The Open Group's Sensor Open Systems Architecture™ (SOSA) Technical Standard, CMOSS, FACE™, VICTORY, OpenVPX™, VPX™, VME™, XMC™, and FMC™. These standards serve as the foundation for modern Modular Open System Approach (MOSA) acquisition and design strategies. They also define many of the hardware and software features that minimize size, weight, power and cost (SWaP-C) for deployed systems while increasing interoperability, maintainability, reusability, and scalability.

The proven technologies and intellectual property that we have developed in delivering COTS open standards solutions provide customers with significant cost, lead time, and supportability advantages. These same proven technologies become part of our valuable IP library of assets for our customers, enabling the rapid creation of customized and point-design solutions when needed.

With solutions deployed on hundreds of defense programs, Curtiss-Wright supports products throughout the long lifecycles typical of defense and aerospace programs. Our product families typically remain in volume production for seven to ten years, and in numerous cases for greater than 15 years. During the early production years, products are updated through software maintenance and reliability enhancements. Obsolescence is managed throughout the entire product life cycle.

Defense customers frequently need control of product configurations to mitigate the risk of component obsolescence and product changes. Application stability, predictability and long-term availability are essential for deployed mission-critical systems that have in-service life that long exceeds the normal volume production period. To meet these marketplace demands, Curtiss-Wright provides a suite of Total LifeCycle Management™ (TLCM) services that safeguard programs and mitigate the challenges of leveraging COTS technology for long-term mission-critical systems.

Introducing Fabric100 100GbE Data Processing Technology

As the complexity of data processing for defense and aerospace applications increases, system designers must adapt to the latest proven technologies to deliver faster processing and information sharing. To address this challenge, many of our next generation embedded computing cards will feature Fabric100™ connectivity. Fabric100 is a complete end-to-end ecosystem of high-speed rugged OpenVPX components designed to deliver uncompromised 100 Gbps data processing and information sharing across the platform.

It is not enough to simply provide 100 Gbit connections between a system's modules yet fail to support the ability to process all this data within the modules themselves. Recognizing that, Curtiss-Wright's Fabric100 board architectures are designed to deliver full 100 Gbit performance through the entire processing chain, to effectively eliminate data bottlenecks that might otherwise compromise system performance.

Fabric100 boards are built upon and are compatible with our proven Fabric40™ (40 GbE) technology.

Trusted and Secure Computing

Curtiss-Wright's approach to embedded security deploys defense-in-depth and defense-in-breadth strategies to leverage the powerful security features inherent in commercial components and to add additional defense-grade security technologies. Our TrustedCOTS™ framework fully enables the security capabilities of commercial hardware and software technologies to protect applications and data from compromise. Additional software capabilities can be added for data-in-transit encryption and to establish security firewalls. This robust security approach aligns with risk management frameworks (RMF), cyber requirements, and secure boot standards, making it suitable for global deployments.

TrustedCOTS products and capabilities are vendor agnostic and are built to seamlessly complement customer in-house capabilities around three major data protection domains:

- **Technology Protection:** Safeguards how computing tasks are executed. Combines hardware capabilities, software algorithms, and operations to protect system functionality.
- **Data Protection:** Safeguards software algorithms, data-at-rest, and data-in-motion from compromise.
- **Parts Protection:** Safeguards the supply chain and manufacturing processes, ensuring that components are authentic, and approaches have met the strictest quality controls.

TrustedCOTS Security Frameworks

There is no one-size-fits-all solution when it comes to trusted computing. Curtiss-Wright's TrustedCOTS products are designed to meet many cybersecurity and system integrity requirements to provide protection mechanisms for the boot chain, provide access control for configuration menus and encryption and sanitization routines for non-volatile memory, establish a key management infrastructure, and enable other protections to support cybersecurity requirements.

TrustedCOTS products use leading commercial hardware and software components, such as trusted platform modules (TPM), Intel® Boot Guard, NXP® Trust Architecture, and Arm® TrustZone technology. Operating systems used by our products rely on boot-chain components such as Intel UEFI or NXP Secure Boot. Additionally, data-at-rest security may be offered through solid-state drive (SSD) encryption using software-based encryption (LUKS or equivalent) and/or hardware-based self-encrypting SSDs.

Enhanced TrustedCOTS

Curtiss-Wright's Enhanced TrustedCOTS framework builds on TrustedCOTS technologies by adding specialized security capabilities that provide higher levels of protection with a secure state-of-the-art customizable FPGA. Through best-in-class partnerships, Curtiss-Wright can add side-channel resistant cryptography, integrity sensors, policy management capabilities, and physical protection mechanisms to meet more demanding security requirements. Our MOSA design philosophy for embedded security enables industry-leading security IP to be easily hosted on TrustedCOTS security-enabled hardware to deliver customer-personalized program protection. Security functionality can also be customized to meet program or country-specific requirements.

Curtiss-Wright's Enhanced TrustedCOTS framework provides the necessary agnostic infrastructure on select processor modules to host security IP from our partners and provides critical programs with the defense-grade security they need – and only what they need.

Benefits of Enhanced TrustedCOTS

- Leverages the speed of COTS and the security IP of leading industry partners.
- Enables customization of security on COTS processors by selecting only the program protections required.
- Enables the addition of security IP at any phase of the program to support changes in security policy.

For more information about our open system approach to embedded security, please refer to the TrustedCOTS and Enhanced TrustedCOTS for Trusted Computing brochure.

Capabilities

Ruggedization

Curtiss-Wright specializes in developing products deployed in the harsh environments typical of defense and aerospace applications. Our unparalleled experience and expertise in delivering rugged solutions distinguishes us from other COTS vendors. All Curtiss-Wright embedded COTS products are ruggedized to withstand extreme temperature, shock, vibration, and environmental hazards, including those environments defined by the ANSI/VITA 47, ATPD-2404, MIL-STD-810, DO-160 standards, and beyond. Our ruggedization processes result from decades of research and development focusing on rugged electronics reliability, materials technology, cooling techniques, and rigorous qualification testing.

The following ruggedization specifications express the minimum capability of Curtiss-Wright products. Refer to individual product specifications or contact your local representative for detailed information and expert guidance. These ruggedization levels are provided as a guideline, and particular products may vary slightly in each range. Not all products support all levels of ruggedization. Please refer to individual product data sheets for availability information.

New high-performance processor and FPGA devices feature very high-power dissipation potentials. Air Flow Through and Liquid Flow Through cooling solutions have been developed and are being implemented to address the challenge of extracting heat from these devices. Please contact Curtiss-Wright for further information.

Environmental Condition	Air-cooled			Conduction-cooled				Air-Flow Through (Note 6)
	Level 0	Level 50	Level 100	Level 0	Level 100	Level 200	Level 300	
Operating Temperature	0 to +50° C (Note 4)	20 to +65° C (Note 4)	-40 to +71° C (Note 4)	0 to +50° C (Note 7)	-40 to +71° C (Note 7)	-40 to +85° C (Note 7)	-40 to +85° C (Note 7)	0 to +55° C (Note 4, 8)
Non-Operating Temperature (Storage)	-40 to +85° C	-40 to +85° C	-55 to +125° C	-40 to +85° C	-55 to +125° C	-55 to +125° C	-55 to +125° C	-55 to +125° C
Non-Operating Humidity (Storage)	0-95% non-condensing	0-100% non-condensing	0-100% non-condensing	0-95% non-condensing	0-100% non-condensing	0-100% non-condensing	0-100% non-condensing	0-100% non-condensing
Vibration Sine (Note 1)	2g Peak 5-2000Hz	2g Peak 5-2000Hz	10g Peak 5-2000Hz	2g Peak 5-2000Hz	10g Peak 5-2000Hz	10g Peak 5-2000Hz	10g Peak 5-2000Hz	10g Peak 5-2000Hz
Vibration Random (Note 1)	0.04 @ 5 Hz 0.04 @ 100 Hz 0.01 @ 2000 Hz	0.04 @ 5 Hz 0.04 @ 100 Hz 0.01 @ 2000 Hz	0.002 @ 5 Hz 0.04 @ 15 Hz 0.04 @ 2000 Hz	0.04 @ 5 Hz 0.04 @ 100 Hz 0.01 @ 2000 Hz	0.005 @ 5 Hz 0.1 @ 15 Hz 0.1 @ 2000 Hz	0.005 @ 5 Hz 0.1 @ 15 Hz 0.1 @ 2000 Hz	0.005 @ 5 Hz 0.1 @ 15 Hz 0.1 @ 2000 Hz	0.005 @ 5 Hz 0.1 @ 15 Hz 0.1 @ 2000 Hz
Shock (Note 3)	20g Peak	20g Peak	30g Peak	20g Peak	40g Peak	40g Peak	40g Peak	40g Peak
Altitude (Note 9)	-1,500 to 60,000 ft	-1,500 to 60,000 ft	-1,500 to 60,000 ft	-1,500 to 60,000 ft	-1,500 to 60,000 ft	-1,500 to 60,000 ft	-1,500 to 60,000 ft	-1,500 to 60,000 ft
Note: Conformal Coat	No	Consult Factory	Yes	No	Yes	Yes	Yes	Yes
2 Level Maintenance Covers	–	–	–	–	No	No	Yes	Yes

1. Sine vibration based on a sine sweep duration of 10 minutes per axis in each of three mutually perpendicular axes. May be displacement limited from 5 to 44 Hz, depending on specific test equipment.
2. Random vibration 60 minutes per axis, in each of three mutually perpendicular axes.
3. Three hits in each axis, both directions, 1/2 sine and terminal-peak saw tooth. Total 36 hits.
4. Consult the factory for air flow rate details.
5. Contact the factory for details on the availability of conformal coating type.
6. Consult factory for availability.
7. Temperature is measured at the card edge.
8. Assuming maximum pressure of 2.5˚ H20.
9. Forced air-cooled designs shall receive the same minimum mass airflow rate under these conditions as required at sea level.

Packaging for Performance

Successfully deploying products in harsh environments demands more than just high performance, rich functionality, and affordability. Curtiss-Wright COTS products must also deliver reliable performance under adverse conditions like extended temperatures. To achieve this, Curtiss-Wright invests in research that advances packaging techniques. This research includes the exploration of materials technology and innovative cooling methods such as heat pipes, evaporative cooling, immersion, and liquid- and air-flow-through technologies.

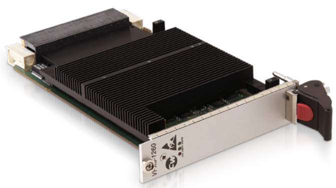


Figure 1: VPX3-1260 with Air-cooled Thermal Frame

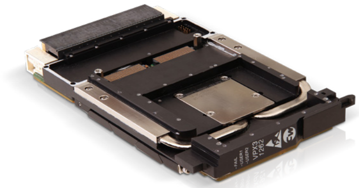


Figure 2: VPX3-1262 in Conduction-cooled with high-performance heat pipes

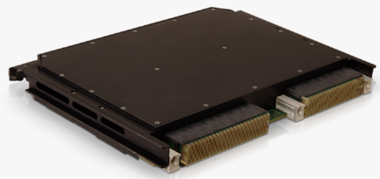


Figure 3: CHAMP-XD4 in VITA 48.8 Air-Flow-Through (AFT) Cooling

Reliability

In addition to ruggedization and packaging for performance, delivering the highest level of reliability requires in-depth scientific design, testing, analysis, and validation to ensure that our rugged solutions will dependably perform for many years to come. Curtiss-Wright's commitment to reliability goes beyond testing to our reliability criteria and ECC4 levels of VITA 47, an ANSI standard that defines rigorous environmental, design and construction, safety, and quality requirements for plug-in COTS hardware for use in defense and aerospace applications. Should a customer's environmental requirement be extraordinarily stringent, we can add other proven approaches and techniques that provide additional durability to deliver COTS products with the highest levels of reliability in the market.

Curtiss-Wright has well established, thorough COTS design processes for highly reliable and rugged designs. Techniques such as electrical and mechanical design modeling and analysis, rigorous component selection and qualification processes, enhanced temperature cycling, shock and vibration testing, and continuous feedback and improvement ensures embedded computing COTS cards meet the ruggedization level standards established and perform under extreme conditions.

All products manufactured at our state-of-the-art facility undergo complete functional testing and Environmental Stress Screens (ESS) running functional test software. This ESS testing screens out subtle component failures, and includes hot and cold starts and supply voltage variations to detect early component failures or manufacturing defects. Curtiss-Wright follows a conservative practice of specifying for worst-case thermal scenarios.

Safety-Certifiable

Curtiss-Wright has extensive experience and proven success in developing low-risk, safety-certifiable COTS avionics products. These products comply with AC/AMC 20-152A standards to meet Design Assurance Levels (DAL) up to and including DAL-A. AC/AMC 20-152A describes an acceptable means for showing compliance with the applicable airworthiness regulations for airborne electronic hardware. It explains how to apply RTCA DO-254/EUROCAE ED-80 with additional guidance and clarification for the development of custom devices, the use of COTS devices, and the development of circuit board assemblies (CBA).

Curtiss-Wright's safety-certifiable COTS products include compute-intensive civil and military-embedded processing systems, 3U VPX form factor processor cards, 3U VPX graphics cards, and flight data recorders. We leverage established processes, hardware design expertise, and software development techniques that enable our customers to reduce their certification risk and project costs while accelerating their time to market. Safety-certifiable COTS hardware reduces program risk and accelerates time-to-deployment by providing system integrators with the board-level data artifacts needed to support a system level avionics certification process. The availability of proven, safety-certifiable COTS data artifacts, with no required NRE, can save customers the millions of dollars and multiple years of development typically required to develop a safety-certifiable processor and the required data artifacts from the ground up.

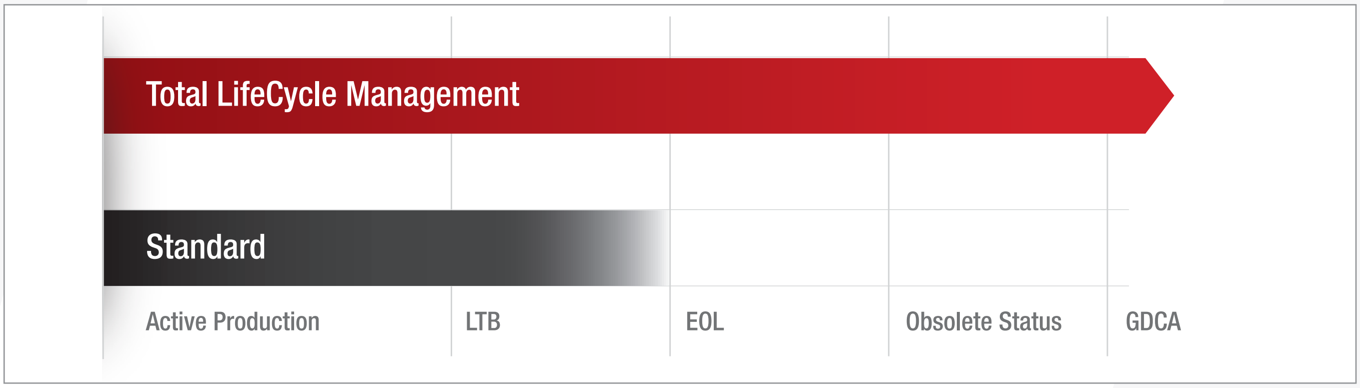
Modified COTS

Modern embedded computing applications demand that today's most advanced and SWaP-optimized processor, networking, and I/O technologies be delivered within ever shorter development schedules, and at minimal NRE cost. These demands create challenges for system integrators who must build a modern technical solution quickly while staying on budget.

Building solutions with COTS hardware saves time and money and reduces risk. If a program has unique requirements not already built into the original COTS hardware or require a unique tailored solution, system integrators must consider how those requirements will affect the bottom line. Developing a custom solution is expensive and can cost integrators precious time. When a program needs to architect the perfect solution, they gain a competitive edge by using Curtiss-Wright's Modified COTS (MCOTS) program to get small or large custom modifications to a standard COTS product quickly. MCOTS enables the customer to get the perfect fit product that incorporates unique development requirements – ranging from the design and manufacture of custom cards, the development of board support software packages and drivers, and the availability of rapid subsystem pre-integration capabilities.

Total Lifecycle Management

Curtiss-Wright's TLCM offers a best-in-class comprehensive lifecycle management solution that enhances customer engagement and transparency compared to competing services. These services enable customers to defer or eliminate costly redesigns driven by component, technology, process, or test infrastructure obsolescence. By choosing TLCM, customers ensure the availability of critical electronics so they can effectively mitigate diminished manufacturing source and material shortages (DMSMS).



TLCM Assures the Uninterrupted Supply of Critical Electronics

A customer can identify if TLCM is suited or required for a particular program by answering the following simple questions:

- Does the program require pre-approval over any proposed engineering changes before they occur?
- Does the Curtiss-Wright supplied product adhere to a source-controlled drawing (SCD), or has the design been locked down and qualified?
- Does the program need to guarantee future production quantities during a DMSMS event?
- Is the application safety-certifiable?

If the answer to any of these questions is "yes," the program will significantly benefit from TLCM services.

Product Configuration Management

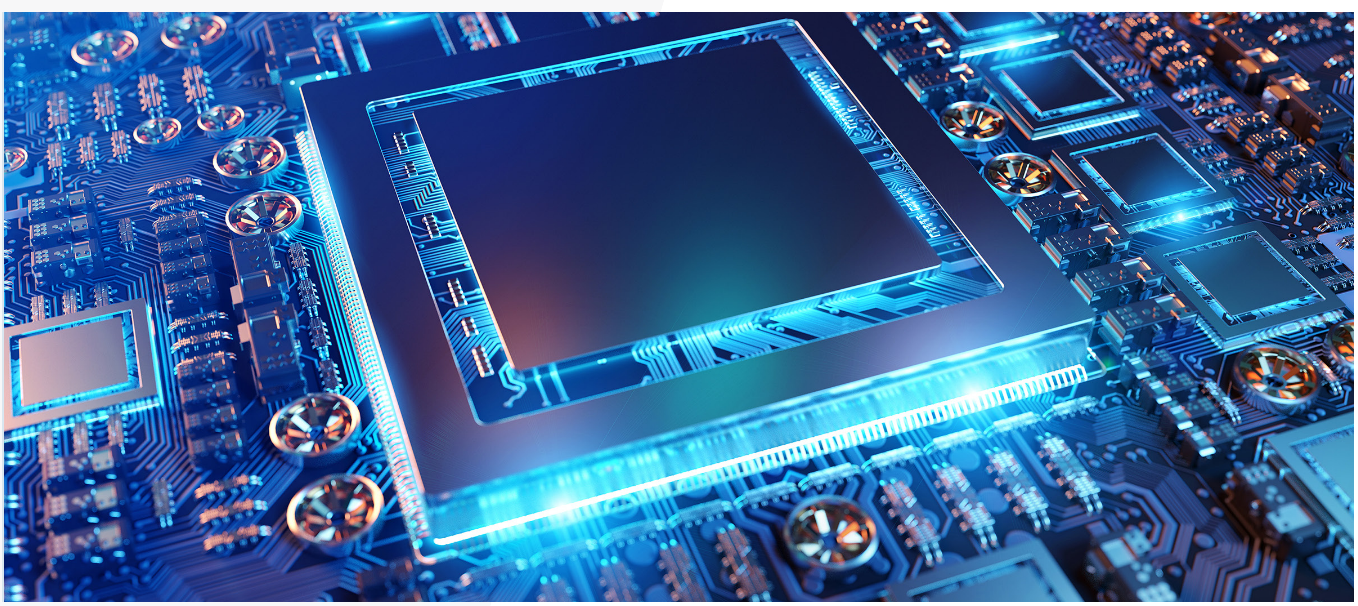
TLCM enables customers to select a preferred configuration. This can include a frozen or locked configuration, approval of minor changes, or a tailored mix of options. Through product configuration control and assured component availability processes, TLCM notifies customers of obsolescence in real-time. Customers can then decide to perform lifetime buys or migrate to replacement parts. TLCM maintains high-quality product reliability, even for programs with extremely long lifetimes. TLCM prevents costly re-qualification requirements by ensuring customer-approved engineering changes and maintaining the product configuration baseline during the contracted service period. In essence, TLCM acts as an insurance policy for program continuity and reliability.

Processor Cards

Processor cards are the workhorses of modern electronic systems and are specifically designed to support the long lifecycle of military programs. With a focus on minimizing program cost, development schedule, and integration risk, Curtiss-Wright's wide selection of processor cards are designed to meet unique, rugged environmental and performance requirements with full operational performance. These cards offer high-reliability and safe operation and come with security features to protect against vulnerabilities and attacks.

Curtiss-Wright COTS processors are offered with Intel, NXP Power Architecture® and Arm CPU architectures and are available in industry standard 3U VPX, 6U VPX, and VME form-factors. Supporting many popular pinouts, including SOSA and OpenVPX standards, many products are available with backwards pin compatibility to simplify technology refreshes. For small form-factor embedded computing solutions, XMC processor mezzanine cards provide power-efficient computing performance in a minimal footprint, and can be added to existing basecards for a “zero-footprint” solution, or used directly on platform-specific carriers.

This product selection highlights active products ideal for new designs and technology refresh initiatives. Pin-compatible products, or very closely aligned replacement products, can extend the use of legacy systems to prolong a program's life. Curtiss-Wright supplies legacy (non-active) products for years beyond their expected last-time-buy date. To purchase products not listed in this brochure, please contact a Curtiss-Wright representative.



3U VPX Processor Cards

Product	Form Factor and Profile	Processor (TDP, cores @ freq)	DRAM	SSD	Fabrics	Interfaces	Mezzanines	Security	Power	Rugged-ization	Other
CHAMP-XD3 (VPX3-484)	3U SOSA Payload - 14.6.11 - 14.6.13	Intel Ice Lake D-1746TER (67W) 10c @ 2.0 GHz	48 GB DDR4 (3ch)	Single or dual 80, 160, 480 GB NVMe	**DP:** 40GbE **EP:** PCIe3 **CP/DP:** 10GBase-KR	Optional USB, SATA, LVDS 1000Base-T, UARTs, DIO on non-SOSA variants	–	TPM 2.0, Intel Boot Guard, UEFI Secure Boot, TME, Enhanced TrustedCOTS MPSoC FPGA	Vs1 (+12V)	CC-L300	AVX-512, MPSoC FPGA
CHAMP-XD1 (VPX3-482)	3U OpenVPX - 2F2U-14.2.3	Intel Xeon D-1539 (35W) or D-1559 (45W) 8c @ 1.6 GHz 12c @ 1.5 GHz	32 GB DDR4	16, 32 GB SATA	**DP/EP:** PCIe3 **CP/DP:** 10GBase-KR	1000Base-T, UARTs, USB, SATA, DIO	1x XMC	TPM 1.2	Vs3 (+5V)	AC-L0, CC-L200, CC-L300	
VPX3-1262	3U SOSA I/O Intensive - 14.2.16 3U SOSA Payload - 14.6.11 - 14.6.13	Intel 13th Gen i7-13800HRE (45W) 14c @ 2.5/1.8 GHz	16-64 GB DDR5	160, 480 GB NVMe	**DP:** 100GbE **EP:** PCIe4 **CP/DP:** 10GBase-KR (TSN)	1000Base-T (TSN), DisplayPort, UARTs, USB, SATA, DIO	1x XMC	TPM 2.0, Intel Boot Guard, UEFI Secure Boot, MK-TME	Vs1 (+12V)	CC-L300	TSN
V3-1222	3U SOSA I/O Intensive - 14.2.16	13th Gen Intel Core i7-1376PRE (28W) 14c @ 1.9/1.2 GHz	64 GB DDR5	M.2 Socket	**DP/EP:** PCIe3 **CP/DP:** 10GBase-KR	2x 1000Base-T (TSN), UARTs, USB, SATA, 7x DIO, I2C, 2x DisplayPort	–	TPM 2.0	Vs1 (+12V)	CC-L300	AC/AMC 20-152A Safety certifiable COTS, TSN
VPX3-1260	3U SOSA I/O Intensive - 14.2.16 3U SOSA Payload - 14.6.11 3U OpenVPX - 2F2T-14.2.5 - 2F2U-14.2.3 3U E-OSA	Intel Xeon E-2276MRE (45W) 6c @ 2.8 GHz	8-32 GB DDR4	20, 80, 160, 480 GB NVMe	SOSA: **DP:** 40GbE **EP:** PCIe3 **CP/DP:** 10GBase-KR Non-SOSA: **DP/EP:** PCIe3 **CP/DP:** 10GBase-KR	1000Base-T, DisplayPort, UARTs, USB, SATA, DIO	1x XMC	TPM 2.0, Intel Boot Guard, UEFI Secure Boot, SGX	Vs1 (+12V) or Vs3 (+5V)	AC-L0, AC-L100, CC-L200, CC-L300	
VPX3-1220	3U OpenVPX - 2F2T-14.2.5 - 2F2U-14.2.3	Intel Xeon E3-1505Lv6 (25W) 4c @ 2.2 GHz	8-32 GB DDR4	8-32 GB SATA	**DP/EP:** PCIe3	1000Base-T, 1000Base-KX, DVI/ DisplayPort, UARTs, USB, SATA, DIO	1x XMC	TPM 2.0, UEFI Secure Boot	Vs3 (+5V)	AC-L0, AC-L100, CC-L200, CC-L300	
VPX3-1708	3U SOSA I/O Intensive - 14.2.16	NXP Arm LX2160A (32W) 16c A72 @ 2.0 GHz	32 GB DDR4	80 GB NVMe	**DP/EP:** PCIe3 **CP/DP:** 10GBase-KR	1000Base-T, UARTs, USB, SATA, DIO, I2C	1x XMC	NXP Secure Boot	Vs1 (+12V)	CC-L200, CC-L300	
V3-1708	3U SOSA I/O Intensive - 14.2.16	NXP Arm LX2160A (32W) 16c A72 @ 2.0 GHz	32 GB DDR4	80 GB NVMe	**DP/EP:** PCIe3 **CP/DP:** 10GBase-KR	1000Base-T, UARTs, USB, SATA, DIO, I2C	1x XMC	NXP Secure Boot	Vs1 (+12V)	CC-L300	AC/AMC 20-152A Safety certifiable COTS
VPX3-1703	3U OpenVPX - 2F2T-14.2.5 - 2F2U-14.2.3	NXP Arm LS1043A (9W) 4c A53 @ 1.6 GHz	4 GB DDR4	4-64 GB eMMC	**DP/EP:** PCIe2	1000Base-T, 1000Base-BX, UARTs, USB, DIO	1x XMC		Vs3 (+5V)	AC-L0, CC-L200, CC-L300	
VPX3-1711	3U SOSA Payload - 14.6.11-4	NVIDIA Jetson AGX Orin (30W) 8c Arm Cortex-A78AE @ 1.7GHz	64 GB LDDR5	64 GB eMMC + 1 TB NVMe	**EP:** PCIe3; **CP/DP:** 10GBase-KR **DP:** 40GBase-KR4	UARTs, DIO	–	Platform Security Controller, Secure Boot, Secure memory	Vs1 (+12V)	CC-L300	
VPX3-152	3U OpenVPX - 2F2T-14.2.5 - 2F2U-14.2.3	NXP T2080 (17-25W) 4c @ 1.5/1.8 GHz	4 GB DDR3	4–64 GB eMMC	**DP/EP:** PCIe3	1000Base-T, 1000Base-KX, UARTs, SATA, I2C	1x XMC	NXP Secure Boot	Vs3 (+5V)	AC-L0, AC-L100, CC-L200	
V3-152	3U OpenVPX - 2F2U-14.2.3	NXP T2080 (17-25W) 4c @ 1.8 GHz	4 GB DDR3	4 GB eMMC	**DP/EP:** PCIe3	1000Base-T, 1000Base-KX, UARTs, SATA, I2C	1x XMC	NXP Secure Boot	Vs3 (+5V)	CC-L300	AC/AMC 20-152A Safety certifiable COTS
VPX3-133	3U OpenVPX - 2F2T-14.2.5 - 2F2U-14.2.3	NXP T2080 (17-25W) 4c @ 1.5/1.8 GHz	4-8 GB DDR3	8-32 GB SATA	**DP/EP:** PCIe3	1000Base-T, 1000Base-KX, UARTs, USB, SATA, I2C	1x XMC	NXP Secure Boot	Vs3 (+5V)	AC-L0, AC-L100, CC-L200, CC-L300	

Note 1: V3-1708 and V3-152 operating temperature is reduced to -40C to +80C.

CURTISS-WRIGHT

6U VPX Processor Cards

Product	Form Factor and Profile	Processor (TDP, cores @ freq)	DRAM	SSD	Fabrics	Interfaces	Mezzanines	Security	Power	Ruggedization	Other
CHAMP-XD4 (VPX6-485)	6U SOSA Payload - 10.6.4	Dual Intel Ice Lake D-2700 (77-118W) 12c @ 1.8 GHz 16c @ 2.0 GHz 20c @ 2.0 GHz	128 GB Total 64 GB DDR4 (4ch) per processor	160, 480 GB NVMe per processor	**DP:** 100GbE **EP:** PCIe4 **CP:** 10GBase-KR	1000Base-T, UARTs, USB, SATA, DIO Optional LVDS	–	TPM 2.0, Intel Boot Guard, UEFI Secure Boot, TME, Enhanced TrustedCOTS MPSoC FPGA	Vs1/Vs2 (+12V)	CC-L0, CC-L100, LFT, AFT (contact factory)	AVX-512, MPSoC FPGA
CHAMP-XD2 (VPX6-483)	6U OpenVPX - 4F2Q2U2T-10.2.7	Dual Intel Xeon D-1539 (35W) or D-1559 (45W) 8c @ 1.6 GHz 12c @ 1.5 GHz	64 GB Total 32 GB DDR4 (2ch) per processor	32GB SATA per processor	**DP:** 40GbE or IB **EP:** PCIe3 **CP:** 10Gbase-KR	1000Base-T, UARTs, USB, SATA, DIO	1x XMC	TPM 1.2 Enhanced TrustedCOTS MPSoC FPGA	Vs1/Vs2 (+12V)	AC-L0, AC-L100, CC-L200, CC-L300, LFT/ AFT contact factory	
CHAMP-XD2M (VPX6-483M)	6U OpenVPX - 4F2Q2U2T-10.2.7	Intel Xeon D-1587 (65W) 16c @ 1.7 GHz	128 GB DDR4 (4ch)	32GB SATA	**DP:** 40GbE or IB **EP:** PCIe3 **CP:** 10Gbase-KR	1000Base-T, UARTs, USB, SATA, DIO	1x XMC	TPM 1.2 Enhanced TrustedCOTS MPSoC FPGA	Vs1/Vs2 (+12V)	CC-L100, LFT	
VPX6-1961	6U OpenVPX - 4F1Q2U2T-10.2.6	Intel Xeon W-11865MRE (45W) 8c @ 2.6 GHz	8-64 GB DDR4	20, 80, 160, 480 GB NVMe	**DP/EP:** PCIe3	1000Base-T, 1000Base-KX, DVI/ DisplayPort, UARTs, USB, SATA, DIO, Audio	2x XMC	TPM 2.0, Intel Boot Guard, UEFI Secure Boot	Vs1/Vs2 (+12V)	AC-L0, AC-L100, CC-L200	AVX-512
VPX6-197	6U OpenVPX - 4F1Q2U2T-10.2.1	NXP T2080 (25W) 4c @ 1.8 GHz	4-8 GB DDR3	4-64 GB eMMC	**DP:** 10GbE **EP:** PCIe3 **CP:** 1GbE	10GBase-KR, 1000Base-T, 1000Base-BX, UARTs, USB, SATA, Optional 1553	1x XMC 1x PMC/XMC	NXP Secure Boot	Vs1/Vs2 (+12V)	AC-L0, AC-L100, CC-L200	

VME Processor Cards

Product	Form Factor and Profile	Processor (TDP, cores @ freq)	DRAM	SSD	Fabrics	Interfaces	Mezzanines	Security	Power	Ruggedization	Other
VME-1910	6U VME	Intel Xeon E-2276MRE (45W) 6c @ 2.8 GHz	8-32 GB DDR4	20, 80, 160, 480 GB NVMe	VME	1000Base-T, DVI, VGA, UARTs, USB, SATA, DIO, Audio	2x PMC/XMC	TPM 2.0, Intel Boot Guard, UEFI Secure Boot, SGX	+5V	AC-L0, AC-L100, CC-L200	
VME-196	6U VME	NXP T2080 (17-25W) 4c @ 1.5/1.8 GHz	4-16 GB DDR3	8-64 GB eMMC	VME	1000Base-T, UARTs, USB, Optional 1553	2x PMC/XMC	NXP Secure Boot	+5V	AC-L0, AC-L100, CC-L200	

XMC Mezzanine Processors

Product	Form Factor and Profile	Processor (TDP, cores @ freq)	DRAM	SSD	Fabrics	Interfaces	Mezzanines	Security	Power	Ruggedization	Other
XMC-121	XMC	Intel Xeon E3-1505Lv6 (25W) 4c @ 2.2 GHz	8-32 GB DDR4	8-32 GB SATA	PCIe3	1000Base-T, 1000Base-KX, DVI/ DisplayPort, UARTs, USB, SATA, DIO, I2C, SPI	–	TPM 2.0, UEFI Secure Boot	VPWR (+5V or +12V)	AC-L0, CC-L200	
XMC-120	XMC	Intel Atom e3845 (10W) 4c @ 1.9 GHz	2-8 GB DDR3L	8-32 GB SATA	PCIe2	1000Base-T, 1000Base-BX, DVI/ DisplayPort, VGA, UARTs, USB, SATA, DIO	–	–	VPWR (+5V or +12V)	AC-L0, CC-L200	

FPGA and Sensor Processor Cards

The use of FPGAs and Adaptive SoC devices has revolutionized the flexibility and performance of DSP subsystems. With their large number of gates, hardware multipliers, and high-speed serial interfaces, FPGA and Adaptive SoC-based cards are well suited to a variety of applications that require elements of computing characterized by repetitive fixed-point processing, expressed in highly parallel form, such as FFTs, pulse compression, filters, and digital down converters. In deployed radar, signal intelligence, and image processing systems, the technical advantages provided by FPGAs and Adaptive SoC devices translates to higher-performance systems with lower latency from input to processed output.

Curtiss-Wright's 3U VPX, XMC, and FMC card-based sensor I/O solutions include rugged, high-performance solutions to support intelligent analog I/O for frequency and time domain applications and digital I/O. These modules are designed to deliver optimal performance in extreme temperature and vibration conditions.

New AMD Versal™ Adaptive SoC-based products feature highly capable heterogeneous devices that incorporate traditional FPGA-based logic alongside Arm scalar processors, new floating-point capable DSP engines, extensive hard IP blocks for I/O interfacing (SDRAM, Ethernet, PCIe) and, in some devices, AI Engines for efficient parallel DSP computations. Curtiss-Wright's 3U and 6U VPX products based on the Versal device feature fast 28Gbps fiber optic transceivers for efficiently moving data between these exceptional processing engines and external sensors and systems, plus Fabric100™ Ethernet and Gen4 PCIe for wideband in-chassis communication.

For Enhanced TrustedCOTS functionality, the XMC-528 and XMC-529 cards support high-speed embedded security applications.

VPX FPGA and Sensor Processor Cards

Product	Form Factor	FPGA	Memory	Input Channels	Output Channels	Fabrics	Interfaces	Mezzanines	Ruggedization	Other
CHAMP-FX7 (VPX6-474)	6U SOSA Payload - 10.6.4 w/ VITA 66.5 backplane fiber I/O	2 x AMD Versal Premium Adaptive SoC, VP1502 or VP1702	Per Adaptive SoC: 2 banks 16GB DDR4 1 bank 8GB DDR4 w/ ECC	Up to 64 x 28 Gbps multi-mode fiber receivers	Up to 64 x 28 Gbps multi-mode fiber transmitters	**DP:** 100GBASE-KR4 **EP:** 16-lane PCIe4 **CP:** 10GBASE-KR	1000BASE-T USB, HSS(SATA), LVDS, DIO	–	CC (lab use), LFT, AFT (contact factory)	
CHAMP-FX4 (VPX6-473)	6U OpenVPX - 4F1Q2U2T-10.2.1	2 or 3 AMD Virtex 7 FPGAs Zynq-7030	1 GB DDR3 (Zynq Processor) 4 GB DDR3 (2ch) per FPGA 36 or 72 MB QDRII+ SRAM (2ch) per FPGA	–	–	40x high-speed SerDes **DP:** Gen2 SRIOv2 **EP:** 8-lane PCIe3	1000Base-T, 1000Base-X, RS-232, LVDS, DIO	2x FMC	AC-L0, AC-L100, CC-L200	
CHAMP-WB (VPX6-474)	6U OpenVPX - 4F-10.3.1	AMD Virtex 7 FPGA X690T or X980T	8 GB DDR3 SDRAM, 2ch	–	–	**EP:** PCIe3 20x high-speed SerDes for SRIO, Aurora, etc	LVDS	2x FMC	AC-L0	
VPX3-534	3U OpenVPX - 1D-14.2.6	AMD Kintex UltraScale KU115 FPGA and AMD Zynq ZU4 UltraScale+ MPSoC	4 GB DDR4	12-bit 2ch @ 6Gsps or 4ch @ 3Gsps	12-bit 2ch @ 6Gsps	**DP:** 8-lane PCIe3 2 x 4-lane HSS	1000Base-T, UARTs, LVDS, DIO	–	CC-L100	ADC/ DAC
VPX3-530	3U OpenVPX - 1D-14.2.6	AMD Virtex 7 VX690T	8 GB DDR4 (2ch)	12-bit 2ch @ 4Gsps or 4ch @ 2Gsps	14-bit 2ch @ 5.6Gsps	**DP:** 8-lane PCIe2 8-lane HSS	UARTs, LVDS	–	AC-L0, AC-L100, CC-L200	ADC/ DAC

XMC FPGA, Sensor, and Security Processor Cards

Product	Form Factor	FPGA	Memory	Input Channels	Output Channels	Fabrics	Interfaces	Mezzanine Interfaces	Ruggedization	Other
XMC-529	XMC	AMD ZU11EG MPSoC	8 GB DDR4 PS SDRAM with ECC 8GB DDR4 PL SDRAM with ECC	–	–	8-lane PCIe2	4 x HSS, 1000Base-T, RS-232, DIO, I2C	P15 PCIe P16 I/O	AC-L0, CC-L200	Enhanced TrustedCOTS for max security FPGA development kit Optional pre-integrated security IP
XMC-528	XMC	AMD ZU11EG MPSoC	8 GB DDR4 PS SDRAM with ECC 8GB DDR4 PL SDRAM with ECC	–	–	8-lane PCIe2	1000Base-T, RS-232, LVDS, DIO, I2C	P15 PCIe P16 I/O	AC-L0, CC-L100	Enhanced TrustedCOTS for max security FPGA development kit Optional pre-integrated security IP
XF07-523	XMC	AMD Kintex 7 XC7K325T	2x 256MB SDRAM	–	–	8-lane PCIe2	Front Panel: 32x LVDS (AC only) XMC P16: 20x LVDS & 38x single-ended - OR - PMC P14: 32x LVDS	P15 PCIe P14 or P16 I/O	AC-L0, AC-L100, CC-L200	
XF07-RLDRAM	XMC	AMD Kintex 7 XC7K325T (-410 optional)	2x 256MB SDRAM 2x 16M x 36-bit RLDRAM	–	–	8-lane PCIe2	8 x HSS, 4 x LVDS, 2 x DIO	P15 PCIe P16 I/O	AC-L0, AC-L100, CC-L200	
XF07-516	XMC	AMD Kintex 7 325T	2x 256MB SDRAM	4 x ADCs: 16-bit @ 250 MS/s	–	8-lane PCIe2	Front Panel: Triggers, RF Clock XMC P16: 20x LVDS & 38x single-ended - OR - PMC P14: 32x LVDS	P15 PCIe P14 or P16 I/O	AC-L0, AC-L100, CC-L200	
XF07-518	XMC	AMD Kintex 7 325T	2x 256MB SDRAM	4 x ADCs: 14-bit @ 500 MS/s	–	8-lane PCIe2	Front Panel: Triggers, RF Clock XMC P16: 20x LVDS & 38x single-ended - OR - PMC P14: 32x LVDS	P15 PCIe P14 or P16 I/O	AC-L0, AC-L100, CC-L200	
XCLK1	XMC	–	–	Reset (channel alignment)	6 x phase-aligned clocks, up to 3 GHz	–	–	P11 PCI-X or P15 PCIe (power only)	AC-L0, AC-L100, CC-L100	

GPU, Graphics, and Video Cards

In addition to adding powerful embedded graphics functionality to processor cards, GPU co-processor cards can harness to the enormous floating point processing power of the GPU device for applications requiring massive parallel computing capability, such as algorithmic vector processing and deep learning frameworks for AI/ML applications. Our GPU co-processing engines leverage the latest NVIDIA technologies supporting CUDA software frameworks and include integrated Tensor Cores for machine learning applications. These cards are critical components of our high-performance embedded computing (HPEC) ecosystem that delivers data center capability at the tactical edge.

Curtiss-Wright graphics controllers and video cards provide human-machine interfaces where graphics and sensor imagery must be combined. These cards support functions from simple graphics output to multi-head, high-performance 3D rendering. They are ideal for use in the most advanced deployed applications, such as 3D terrain mapping, target acquisition/tracking, and helmet-mounted displays.

Product	Form Factor	Processor (TDP, cores @ freq)	DRAM	FLOPS Performance	Fabrics	Video Interfaces	Power	Ruggedization	Other
VPX3-717	3U OpenVPX	AMD E8860 (37W)	2 GB GDDR5	768 GFLOPS	8-lane PCIe2	6x DVI 1x VGA	Vs3 (+5V)	CC-L200	1x XMC (processor/IO) Embedded graphics support
V3-717	3U OpenVPX	AMD E8860 (37W)	2 GB GDDR5	768 GFLOPS	8-lane PCIe2	6x DVI 1x VGA	Vs3 (+5V)	CC-L300 (Note 2)	1x XMC AC/AMC 20-152A Safety certifiable COTS Embedded graphics support
VPX3-716	3U OpenVPX	AMD E8860 (37W)	2 GB GDDR5	768 GFLOPS	8-lane PCIe2	2x DVI 2x DisplayPort	Vs3 (+5V)	AC-L0, CC-L200	1x XMC (processor/IO) Embedded graphics support
VPX3-719	3U OpenVPX	AMD E8860 (37W)	2 GB GDDR5	768 GFLOPS	8-lane PCIe2	4x DVI 2x analog 2x HD SDI 2x Analog video capture 2x HD SDI video capture	Vs3 (+5V)	CC-L200	Embedded graphics support
XMC-715	XMC	AMD E4690 (17W)	512 MB	–	8-lane PCIe2	2ch DVI, VGA, CVBS	VPWR (+5V or +12V)	AC-100, CC-200	Embedded graphics support
X-715	XMC	AMD E4690 (17W)	512 MB	–	8-lane PCIe2	2ch DisplayPort	VPWR (+5V or +12V)	CC-L200	AC/AMC 20-152A Safety Certifiable COTS, Embedded graphics support
XMC-4906	XMC	NVIDIA Ada RTX A2000E (25-80W)	8 GB GDDR6	8.25 TFLOPS	8-lane PCIe3	3c DP/DVI	VPWR (+5V or +12V)	WOLF AC-L0, CC-L200	
XMC-4701	XMC	–	–	–	4-lane PCIe2	Video capture 4x HD/3G-SDI, 2x VCBS	VPWR (+5V or +12V)	WOLF CC-L200	Low latency video capture
VPX3-4935	3U OpenVPX 3U SOSA Payload	NVIDIA Turing TU104/ RTX 5000E (50-150W)	16 GB GDDR6	11.2 TFLOPS	8 or 16-lane PCIe3	4ch DVI, DisplayPort	Vs1 (+12V) or Vs3 (+5V)	WOLF AC-L100, CC-L200	
VPX3-4937	3U SOSA Payload	NVIDIA Ada RTX AD5000E (80-115W)	16 GB GDDR6	27.7 TFLOPS	16-lane PCIe4	4x DisplayPort 1x DVI	Vs1 (+12V)	WOLF CC-L200	
VPX3-4938	3U SOSA Payload	NVIDIA Ada RTX AD5000E (80-115W)	16 GB GDDR6	27.7 TFLOPS	16-lane PCIe4	–	Vs1 (+12V)	WOLF CC-L200	NVIDIA CX7 with 100GbE
VPX3-4940	3U SOSA Payload	NVIDIA Ada RTX AD2000E (45-100W)	8GB GDDR6	12.9 TFLOPS	16-lane PCIe4	3x DisplayPort 1x DVI	Vs1 (+12V)	WOLF CC-L200	
VPX6-4955	6U OpenVPX	Single or Dual NVIDIA Turing TU104/RTX 5000E (50-150W per GPU)	16 GB GDDR6 per GPU	11.2 TFLOPS per GPU	16-lane PCIe3	DVI, DisplayPort	Vs1/Vs2 (+12V)	WOLF AC-100, CC-100	
VPX6-4939	6U OpenVPX	Single or Dual NVIDIA RTX AD5000E (80-115W per GPU)	16 GB GDDR6 per GPU	27.7 TFLOPS per GPU	16-lane PCIe4	DVI, DisplayPort	Vs1/Vs2 (+12V)	WOLF CC-L200	

Note 1: Embedded graphics support for RTOS (Wind River, Green Hills Software, DDC-I, SYSGO and Lynx) are supported with GPU drivers (OpenGL and support for GPU functions such as video decode/encode).

Note 2: V3-717 operating temperature is reduced to -40C to +80C.

Note 3: WOLF ruggedization is per WOLF Advanced Technologies standards.

Safety-Certifiable Cards

Customers can reduce safety certification risk, speed their time to market, and reduce costs associated with safety certifying systems with Curtiss-Wright rugged safety-certifiable COTS cards. These cards are designed for use in systems where AMC 20-152A is the means of compliance, which recognizes RTCA DO-254/EUROCAE ED-80 with additional development guidance and clarification. Our COTS safety-certifiable cards support a range of popular safety-critical operating systems, including DDC-I Deos™, Green Hills Software INTEGRITY®-178 tuMP™, Lynx Software Technologies® LynxOS®-178, SYSGO® PikeOS®, and Wind River® VxWorks® 653. Each card is developed with FAA Designated Engineering Representative (DER) Subject Matter Expert oversight and delivered with a complete artifacts package.

Product	Form Factor	Processor (TDP, cores @ freq)	DRAM	SSD	Fabrics	Interfaces	Mezzanines	Security	Power	Ruggedization (Note 1)	Certifiability
V3-1708	3U SOSA I/O Intensive - 14.2.16	NXP Arm LX2160A (32W) 16c A72 @ 2.0 GHz	32 GB DDR4	80 GB NVMe	**DP/EP:** PCIe3 **CP/DP:** 10GBase-KR	1000Base-T, UARTs, USB, SATA, DIO, I2C	1x XMC	NXP Secure Boot	Vs1 (+12V)	CC-L300	AC/AMC 20-152A Safety certifiable COTS
V3-152	3U OpenVPX - 2F2U-14.2.3	NXP T2080 (17-25W) 4c @ 1.8 GHz	4 GB DDR3	4 GB eMMC	**DP/EP:** PCIe3	1000Base-T, 1000Base-KX, UARTs, SATA, I2C	1x XMC	NXP Secure Boot	Vs3 (+5V)	CC-L300	AC/AMC 20-152A Safety certifiable COTS
V3-1222	3U SOSA I/O Intensive - 14.2.16	13th Gen Intel Core i7-1376PRE (28W) 14c @ 1.9/1.2 GHz	64 GB DDR5	M.2 Socket	**DP/EP:** PCIe3 **CP/DP:** 10GBase-KR	1000Base-T, UARTs, USB, SATA, DIO, I2C, 2x DisplayPort	–	TPM 2.0	Vs1 (+12V)	CC-L300	AC/AMC 20-152A Safety certifiable COTS
V3-717	3U OpenVPX - 1D-14.2.6 - 2F-14.2.7	AMD E8860 (37W)	2 GB GDDR5	–	PCIe2	6x DVI 1x VGA	1x XMC	–	Vs3 (+5V)	CC-L300	AC/AMC 20-152A Safety certifiable COTS
X-715	XMC	AMD E4690 (17W)	512MB	–	4-lane PCIe2	2x DisplayPort	–	–	VPWR (+5V or +12V)	CC-L200	AC/AMC 20-152A Safety certifiable COTS

Note 1: Safety-certifiable boards may have reduced operational temperature range.

Network Switch and Router Cards

Customers can realize the potential and promise of fully networked defense and aerospace systems with our robust network solutions that interconnect chassis, cards, and processors. A modern connected environment, where operational success depends on efficient data communications between systems and within systems-of-systems, requires high-performance network switches and routers. Curtiss-Wright offers a broad selection of switch and router cards in various configurations – with a range of form-factors, interfaces, protocols, and features – to meet the most demanding requirements. These solutions are designed to the highest quality, reliability, and ruggedness standards, to deliver ease of system configuration with confidence.

Product	Form Factor	Switch/ Router Type	Interface Speeds	Maximum number of Ports	Port Types	Typical Power	Maximum Power	Power	Ruggedization	Other
VPX3-6816	3U SOSA -6F1U7U-14.4.14 -6F8U-14.4.15 3U OpenVPX -2F24U-14.4.3 -6F8U-14.4.9 -8F-14.4.2	L2 switch and L3 router	1G, 10G, 25G, 40G, 50G, 100G	33	1G-BT 10G-KR 25G-KR 40G-KR4 50G-KR2 100G-KR4	TBD	TBD	Vs1 (+12V) or Vs3 (+5V)	CC-L300	Low power consumption
VPX3-6826	3U SOSA -6F1U7U-14.4.14 -6F8U-14.4.15 3U OpenVPX -2F24U-14.4.3	L2 switch and L3 router	1G, 10G, 25G, 40G, 50G, 100G	49	1G-BT 10G-KR,SR 25G-KR,SR 40G-KR4,SR4 50G-KR2,SR2 100G-KR4,SR4	TBD	TBD	Vs1 (+12V)	CC-L300	Independent DP and CP switches Optical interfaces on front panel
VPX3-655	3U OpenVPX -2F12T-14.4.8 - 8U12T-14.4.10	L2 switch	1G, 10G, 40G	20	10G-BT 1G-KX 10G-KR 40G-KR4	32 W	51 W	Vs1 (+12V) or Vs3 (+5V)	AC-L0, AC-L100 CC-L200, CC-L300	
VPX3-663	3U OpenVPX - 6F8U-14.4.9 - 6F6U-14.4.1	L2 switch and PCIe switch	1G, 10G	10 Ethernet 24-lanes PCIe3	1G-BT 10G-KR 2/4/8-lane PCIe	15 W	26 W	Vs1 (+12V) or Vs3 (+5V)	AC-L0, AC-L100 CC-L200, CC-L300	XMC Mezzanine site
VPX3-652	3U OpenVPX - 16T-14.4.6. - 8U12T-14.4.10	L2 switch	1G	20	1G-BT 1G-KX	11 W	15 W	Vs3 (+5V)	AC-L0, AC-L100 CC-L200, CC-L300	
VPX6-688	6U OpenVPX - 4F24T-10.4.4	L2 switch	1G	24	1G-BT 1G-SX optical	–	36 W	Vs3 (+5V)	AC-L0, AC-L100 CC-L200	
VME-690	6U VME	L2 switch	1G	24	1G-BT 1G-SX optical	–	34 W	+5V	AC-L0, AC-L100 CC-L200	
XMC-651	XMC	L2 switch	1G	12	1G-BT 1G-KX	6 W	7 W	VPWR (+5V or +12V)	AC-L0, AC-L100 CC-L200	Boots in < 1 second
SWI-22-10	PC/104 Express	L2 switch	1G	20	1G-BT	–	14 W	+5V	Passive or thermal cooling plate	
PRV-1059	PC/104	Unmanaged L2 switch	100M	5	100-TX	–	2.2 W	+5V	-40 to +85C	

I/O and Communications Cards

Acquiring and moving data is critical for all applications. Curtiss-Wright offers I/O and communications cards for aerospace and defense, supporting popular communications standards, including MIL-STD-1553, ARINC 429, and digital I/O.

Product	Form Factor	Interface Types	Connectors	Power	Ruggedization	Other
XMC-603	XMC	2x or 4x MIL-STD-1553	P15 PCIe P14 or P16 I/O	VPWR (+5V or +12V)	AC-L0, AC-L100 CC-L200	–

Shared Memory Cards

Shared Memory enables multiple computing platforms to solve portions of the same computational problem in real-time. Curtiss-Wright's Shared Memory cards are optimized for high-speed, ultra-low latency data transfer between multiple computing platforms. These products combine simplicity and high speed to support applications that require a high degree of synchronization and control.

Protocol	Form Factor	Interface Type and Number	Protocol Support	Operating System	Ruggedization
SCRAMNet GT200	PMC	Shared Memory (Note 1)	2.5 Gbps, 200 MB/s throughput	Linux, Windows	AC 0

Note 1: SCRAMNet GT is a ring topology shared memory net.

Data Storage Cards

Curtiss-Wright Direct Attached Storage (DAS) cards enable SATA and NVMe storage to be incorporated in VPX systems to address a wide range of applications. DAS enables data storage devices to attach directly to the host. These data solutions are scalable, enabling the storage of high-density mission-critical data, from multiple Gigabytes to Terabytes. In addition, some products feature encryption and sanitization capabilities to ensure the security of critical information.

Product	Form Factor	Storage Type	Capacities	Interface	Encryption	Power	Ruggedization	Other
FSM-2	3U OpenVPX	4x SATA SSD	2 TB	SATA	AES-256 FIPS 140-2	–	–	100K insertion cycle connector
VPX6-SBM	6U OpenVPX	NVMe	32 or 64 TB	16-lane PCIe	–	Vs1/Vs2 (+12V)	–	–
XMC-554C	XMC	2x SATA SSD	1 TB (2x 512 GB)	2-lane PCIe2	–	VPWR (+5V or +12V)	CC-L200	–
RMC	2.5" SATA SSD	SATA SSD	256 GB to 8 TB	SATA	AES-256 optional	–	-40 to +85C	100K insertion cycle connector

Assured Position, Navigation, and Timing (A-PNT) Solutions

Defense applications must often operate in remote and challenging environments, where mission success hinges on aligning disparate units, often without access to GPS or satellites. To provide ground vehicles with access to trusted and assured position, navigation, and timing (A-PNT) information while operating in conditions with limited, impeded, or denied GPS/GNSS, Curtiss-Wright offers a rugged COTS-based A-PNT solution.

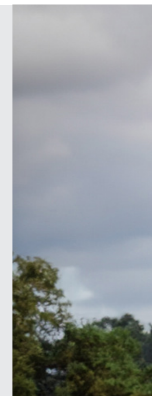
Cost-effective, simple to configure, and size, weight, and power (SWaP)-optimized, our A-PNT card is rapidly deployable on combat and tactical wheeled vehicle platforms. This assured-PNT solution is engineered to ensure mission success. It facilitates seamless integration of software and hardware elements, enabling warfighters to conduct operations effectively in GPS/GNSS-denied environments.

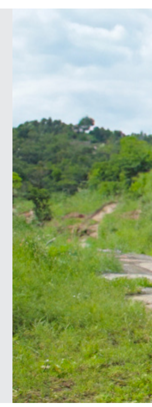
Product	Form Factor	Module Type	Fabrics	Interfaces	Power	Ruggedization	Other
VPX3-673A	3U SOSA SLT3x-TIM- 2S1U22S1U2U1H-14.9.2	Assured Position, Navigation & Timing (A-PNT)	**CP/DP:** 1000Base-KX	Reference input, 11x outputs Aux input, 11x outputs GPS Antennas	Vs1 (+12V)	CC-L300	–

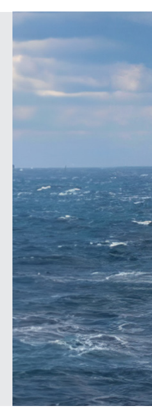
Read more

TrustedCOTS and Enhanced TrustedCOTS for Trusted Computing Brochure

株式会社エルエッチエス
〒169-0075　東京都新宿区高田馬場4-2-33
TEL:　03-5337-2631
Mail: sales@lhs.co.jp
Web:　https://lhs.co.jp/







Contact Us

curtisswrightds.com/contact
ds@curtisswright.com
curtisswrightds.com