

SYSTEM SOLUTIONS

**CURTISS-
WRIGHT**

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+ Products + Capabilities + Solutions



AIR



LAND



SEA

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**System
Packaging**



**Thermal
Management**

**COTS
Modules**

**Domain
Expertise**

**System
Engineering**

**Lifecycle
Services**

**Program
Expertise**



**CURTISS -
WRIGHT**

ABOUT CURTISS-WRIGHT DEFENSE SOLUTIONS

In air, ground and naval defense, aerospace and border security applications, Curtiss-Wright Defense Solutions, a division of Curtiss-Wright, is an industry-leading supplier of sophisticated electronics products. We are recognized around the world as one of the most innovative designers and manufacturers of highly engineered solutions built rugged from the ground up to reliably perform in harsh conditions.

The Defense Solutions division, together with Curtiss-Wright's Energy and Commercial/Industrial divisions, comprises an integrated and market-facing global diversified industrial company that combines a wide range of product lines, technologies, and expertise. We are proud to maintain and further our long and historic tradition of innovation that honors the legacy of the Company's founders, the Wright brothers and Glenn Curtiss. We continue to lead the way in developing and bringing to market new advanced solutions that address the rapidly evolving requirements of emerging naval, aerospace and ground defense systems and applications.

Curtiss-Wright's open architecture Commercial Off the Shelf (COTS) based rugged embedded computing solutions process data in real time to support mission-critical functions. We play a key industry role in the establishment of resources and services to ensure that our customers have access to the long lifecycle support required by aerospace and defense programs. We offer comprehensive approaches for mitigating obsolescence, blocking the use of counterfeit parts, and developing product roadmaps to ease the integration of future generations of technologies.



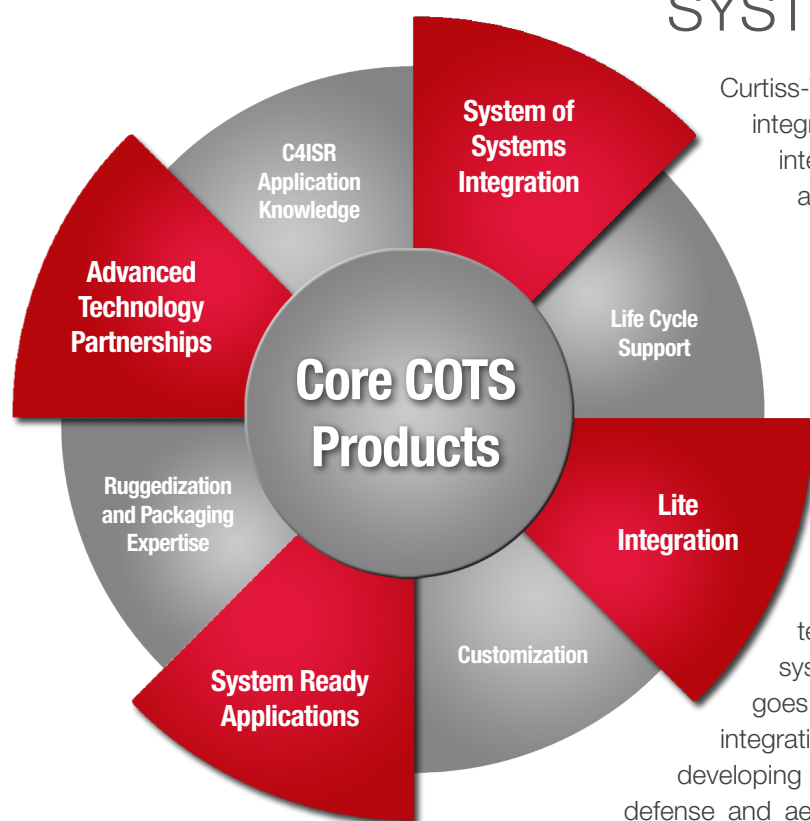
*Innovative design
and manufacturing of highly
engineered solutions*

THE CURTISS-WRIGHT ADVANTAGE

Curtiss-Wright is a technological leader in providing COTS products and open architecture solutions for mission computing, signal processing, graphics, communication fabrics, system and sensing I/O, and chassis products.

The “building block” approach to providing solutions gives our customers great benefits with respect to cost, lead time, and supportability. While providing these non-developmental items, the technology developed and the intellectual property also becomes a benefit for our customers in the ability to provide custom or point-design products when necessary.

Curtiss-Wright has products on hundreds of programs and continues to provide support throughout their life cycle. This experience has taught us that long term support, obsolescence management, and security are key aspects of every program, and sometimes raises concerns of risk when applying COTS technology. In order to eliminate this concern, Curtiss-Wright provides product families for a volume production period of five to seven plus years. During this period, products undergo continuous improvement through software revisions, reliability enhancements and component upgrades. We realize our customers require knowledge, and often control, of these improvements. Application stability and predictability is essential for deployed mission-critical systems, which have an in-service life long past the volume production period. To meet these marketplace demands, Curtiss-Wright provides a suite of Continuum Lifecycle Services that safeguard your programs and mitigate the challenges associated with leveraging COTS technology for long-term mission-critical systems.



SYSTEM OF SYSTEMS

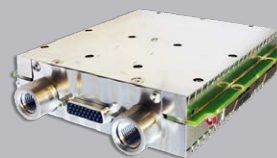
Curtiss-Wright delivers complete system of systems integration and support services that reduce interoperability risks, lowers program costs and accelerates time to market. Each system of systems project is provided with a single Curtiss-Wright program manager and single technical point of contact.

Our single point of contact approach eliminates the supply chain overhead created by multiple purchase orders, separately negotiated terms and conditions, and different repair and warranty support sites. This frees up valuable resources to focus on your unique integrated solution.

Curtiss-Wright performs complete on-site field testing, integration support, and training for all systems to ensure the platform integration process goes smoothly. Our engineers address any on-site integration challenges, leveraging decades of experience developing rugged embedded components and systems for defense and aerospace customers worldwide. Full life-cycle and obsolescence ensures support is extended beyond integration.



ESCADU



ADCM

AIR DATA COMPUTERS

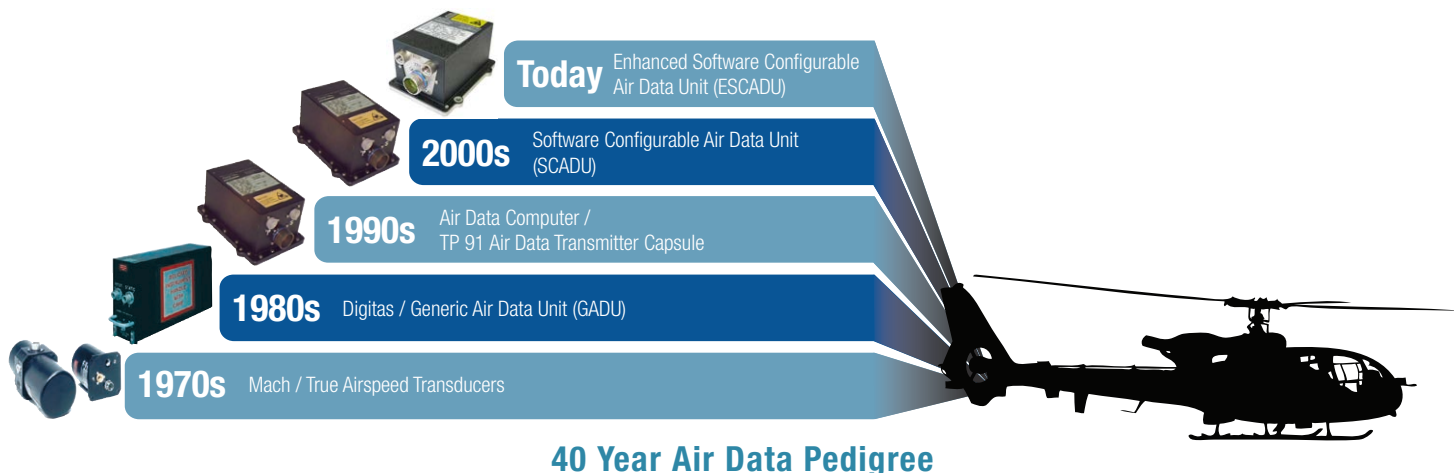
Aircraft rely heavily on air data computers (ADC) to provide airspeed and altitude parameters that are essential to safe and efficient operation. Rotorcraft experience some unique phenomena because of rotor downwash which can affect the accuracy of pressure measurements and fleets often consist of different aircraft that can create additional logistics overheads.

High accuracy, low drift sensors can be used to provide pilots and autopilots with the information they need to travel at high altitudes safer. The effects of rotor downwash can be alleviated with digital filtering that reduces the pneumatic noise in air pressure without adding weight like mechanical solutions. Multiple aircraft can be fitted with identical ADCs as long as each ADC is capable of holding multiple sets of configuration data to match the target platform.

Curtiss-Wright has developed technologies within its ADC product line to address these needs. High accuracy sensors and decades of experience provide stable data while digital filtering technology mitigate rotor downwash effects. Fully rugged design ensures reliable operation. The needs of diverse fleets are simplified with a single unit being usable on up to 15 different platforms through a simple pin-out selection. Curtiss-Wright has over 40 years' experience developing air data solutions and that knowledge helps us get you the best solution available on the market today.

AIR DATA HISTORY

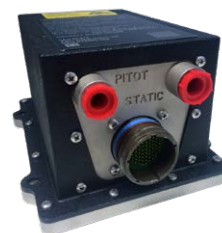
Curtiss-Wright has been designing and manufacturing ADC products since 1976 and has an installed base of over ten thousand units. Today's highly configurable and reliable air data units are TSO-C106 and RTCA DO-178/254 DAL A certified on 30 aircraft platforms.



Enhanced Software Configurable Air Data Unit (ESCADU)

ESCADU is intended to be the primary supplier of air data parameters to the aircraft systems. It can store up to 15 configurations in a single unit allowing a unit with the same part number to be used across 15 different aircraft platforms. This reduces the cost of ownership through reduced spares requirements and simplified, flexible fleet management.

It uses digital filtering to counter the effects of rotor downwash, eliminating the need for mechanical damping systems such as large volumes attached to pitot static pipework. ESCADU has a prestigious pedigree and is in operation on some of the most well established platforms in aerospace.



Air Data Computer Module (ADCM)

The ADCM provides high accuracy data (up to ± 0.25 Bar) consistently over long periods by using high accuracy, low drift sensors that reduce maintenance overhead. It is a custom product using technology that will forge the future of the Curtiss-Wright air data computer product line. It is designed using the latest high stability, low drift pressure transducer technologies and safety targeted electronics. It provides a highly reliable and highly accurate air data computer module that is simple to install, operate and maintain and provides low ownership costs.



Computer Controlled Air Data Test Set (CCADTS)

The CCADTS is an air data test set which applies pressure to the pitot and static ports of an aircraft and performs all testing functions required to calibrate air data cockpit instruments in situ. It can be operated by one person only and reduces aircraft ground time and calibration costs.

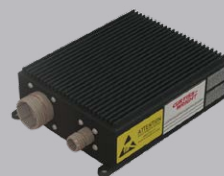


*40 years experience
and an installed base of
over 10,000 units*





Data Acquisition



Remote Interface Unit

REMOTE ELECTRONIC UNITS

Remote Electronics Units (REU) act as critical interfaces between dozens of aircraft systems on modern aircraft platforms. These devices take on many functions: they get the right pilot command to the right control surface, they ensure that landing gear deploy correctly, they monitor fuel levels, they monitor ice accretion, they allow 40 year old transducers communicate with modern glass cockpits, and they must work to a high level of reliability.

During your next custom REU development, imagine you could prototype your design in hardware well in advance of the DO-178/254 design phase, not once but multiple times. This would give you the ability test your data concentrator unit (DCU) or remote interface unit (RIU) with its eventual interface systems, allowing you to catch bugs very early and refine your design to the nth degree. When DO-178/254 design of custom units begins, you are not just working off a paper specification, you have working hardware and you have hugely mitigated program risks.

- Validate specification and remove development risk
- Identify “Known Unknowns” and “Unknown Unknowns”

Remote Electronic Units

Data Concentrators

Systems Monitoring

Remote Interface Units

Flight Data Acquisition

Control Units

Structural Monitoring

Space Instrumentation

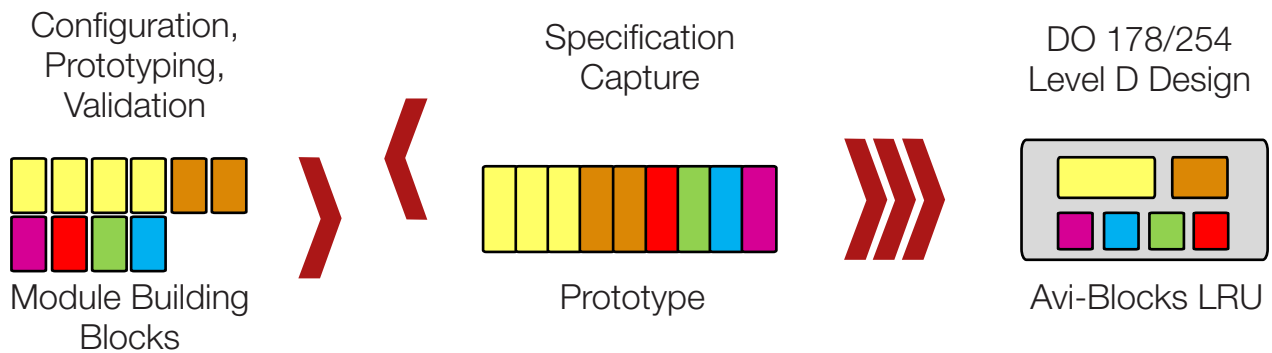


AviBlocks

Curtiss-Wright provide a multi-phase AviBlocks development flow which allows developers to realise early designs using modular avionics building blocks. AviBlocks derive from well proven Curtiss-Wright data acquisition products which encompass hundreds of interface module types, and is used on hundreds of platforms in extreme environments.

This modular architecture allows for rapid prototyping, validation and robust specification capture prior to DO-178/254 design phase. Curtiss-Wright developers can take finalized AviBlocks configurations and port them directly into customer specific products using Curtiss-Wright DO-178 and DO-254 design processes.

This paradigm retains the adaptability of a modular system allowing unique specification LRUs to be realized without the development costs associated with a new bespoke unit. AviBlocks can be used to develop systems such as data concentrators, remote interface units and data acquisition, monitoring and control units.





Compact Network Storage
(4 slot)



3 Slot Data
Transport System



1 Slot Data
Transport System



Removable Memory
Cartridge

DATA STORAGE

Program requirements are tough enough to meet initially, but when requirements are changed or new ones are introduced during the program, this introduces schedule, cost and technical risk for engineers. What if you had a data recording and storage system that could adapt to new I/O, more storage, or increase encryption? Curtiss-Wright's COTS storage products offer a flexible I/O front-end, scalable storage, and a broad spectrum of encryption to help you meet those changing requirements.

Data storage solutions with rugged removable solid state and rotating media designed for use in harsh environments offer users flexibility and scalability. Supporting the reliable, secure storage of high density critical data for applications with Gigabyte and Terabyte requirements, we offer advanced encryption and sanitization capabilities. Whether your application requires direct attached storage (DAS), network attached storage (NAS) or storage area network (SAN) solutions, Curtiss-Wright delivers secure, scalable rugged solutions to meet your critical data storage requirements.

Direct Attached Storage

Curtiss-Wright DAS products enable solid state media to be incorporated in embedded computing VPX and VXS system solutions for a wide range of applications. Enabling our scalable data storage devices to attach directly to the host, some products feature encryption and sanitization capabilities allowing you to keep your information secure.

Product	Form Factor	Function	Interface	Capacity	Encryption	Support	Temperature
FSM-2	3U VPX	Removable solid state SATA	4 x SATA on VPX (JBOD), 1 x SATA on VPX (RAID), 1 x RS-232 (control)	2 TB	AES-256 bit, FIPS 140-2 validated	No drivers required	-40 to +85°C Conduction cooled
FSM	3U VPX	Removable solid state SATA	4 x SATA on VPX (JBOD), 1 x RS-232 (control)	2 TB or 1 TB	AES-256 bit, FIPS 140-2	No drivers required	-40 to +85°C Conduction cooled
FSM-C	3U VPX or 100K connector	Removable solid state SATA	1 x SATA	Up to 2 TB	Optional SSDs can provide AES encryption	No drivers required	-40 to +85°C Conduction cooled
RMC	0.6 x 3.3 x 5.5" 1.5 x 8.4 x 14.0 cm	Removable solid state SATA	1 x SATA	Up to 4 TB	Optional SSDs can provide AES encryption	No drivers required	Conduction cooled

Network Attached Storage

Curtiss-Wright encrypted NAS products are rugged storage subsystems utilizing solid state media for a wide range of defense and aerospace applications. Specifically designed to provide file services to clients on an Ethernet network, these systems offer users data encryption and sanitization options including AES-256 bit data encryption certified to FIPS 140-2 and an option for NSA Type 1, enabling storage of your critical data from multiple Gigabytes to Terabytes. The flexible I/O, scalable storage and advanced encryption options reduce program risk and saves money.

Product	Form Factor	Function	Interface	Capacity	Encryption	Support	Temperature
CNS2	1/2 ATR short	Network file server	4 x 1 GbE 1 x RS-232	2 (1 TB) x FSM storage slots, see FSM capacities below	AES-256 bit, FIPS 140-2	NFS, CIFS, FTP, HTTP, and PXE	-40 to +71°C convection cooled
CNS2 Type 1	1/2 ATR short	Network file server with secret and below encryption	2 x 1 GbE 1 x RS-232, CIK interface	1 (1 TB) x FSM storage slot	NSA type 1 secret and below	NFS, CIFS, FTP, HTTP, and PXE	-40 to +71°C convection cooled
DTS1	DZUS panel mount	Network file server, optional Ethernet packet capture recorder	2 x 1 GbE	1 (2 TB) x RMC storage slot	No encryption (bypass) or AES-256 bit encryption	NFS, CIFS, FTP, HTTP, and PXE, optional PCAP	-40 to +55°C (+71 for 30 min) convection cooled
DTS3	DZUS panel mount	Network file server, optional Ethernet packet capture recorder	4 x 1 GbE 1 x RS-232	3 (2 TB) x RMC storage slots, (3 TB total)	No encryption (bypass) or AES-256 bit encryption	NFS, CIFS, FTP, HTTP, and PXE, optional PCAP	-40 to +55°C (+71 for 30 min) convection cooled
CNS4	1 ATR 10 x 7.6 x 12.5" 25.4 x 19.4 x 31.8 cm	Network file server with rugged removable storage	4 x 1 GbE 1 x RS-232 10 GbE option	Up to 8 TB 4 x FSM-C	AES-256 bit Type 1 option	NFS, CIFS, FTP, HTTP, and PXE	-40°C to +55°C (+71 for 30 min) convection cooled
HSR40	Multiple mounting options	Network file server or streaming recorder with rugged removable storage	2 x 40 GbE 1 x 1 GbE (Control)	Up to 64 TB 2 x RMB	Optional AES 256-bit and/or self-encrypting drives (SED)	NFS via TCP/IP Streaming via UDP/IP	TBD

Storage Area Network

Many Intelligence, Surveillance, and Reconnaissance (ISR) programs have been deployed for a number of years, if not decades. Some of these programs from the 1990's and early 2000's employed Fibre Channel (FC) technology to reliably transport sensor data over significant distances. With millions of dollars and lots of time invested in FC-based sensors on military platforms, how can a system architect upgrade a legacy platform with modern data storage and recording, but retain the FC sensors on-board? FC emulation in modern SAN products, such as those offered by Curtiss-Wright, allows the continued use of FC-based sensors, reducing program cost and risk.

Product	Form Factor	Function	Interface	Capacity	Encryption	Support	Ruggedization
CNS4-FC	One ATR	FC target drive and NAS	2 x 4 Gbps FC and 4 x GbE, 1 x RS-232	4 x FSM-C	256-bit AES, AES-256 bit Type 1 option	FC, NFS, CIFS, FTP, HTTP, and PXE	-40°C to +55°C (+71°C intermittent operation)
CNS2-FC	1/2 ATR short	FC target drive and NAS	2 x 4 Gbps FC and 2 x GbE, 1 x RS-232	2 x FSM	AES-256 bit, FIPS 140-2 validated	FC, NFS, CIFS, FTP, HTTP, and PXE	-40 to +71°C convection cooled



MCSR



VRDV



FORTRESS

DATA RECORDERS

In a world of ever increasing data volume and complexity, signal processing applications frequently require recording, playback, and/or analysis of data in real-time. Curtiss-Wright data recorders include custom, rack mount, video, and board level recorders that range from non-rugged laboratory solutions to rugged deployed solutions. Depending on your program requirements, Curtiss-Wright also provides custom program specific system design, integration, and training.

Custom Recorders

Curtiss-Wright has developed a wide range of custom rugged data recorder and playback systems that have been deployed on various platforms. With over 15 years of data recording and storage expertise, we have an extensive IP library and numerous hardware building blocks that enable you to reduce your program risk and improve your time to market. From the lab to your deployed system, Curtiss-Wright can supply a solution for you. Below are custom recording system application examples.

Product	Description
Multi-Channel Recording and Playback System	Six channel high-speed 10 GbE and sFPDP recorder with playback
Compact Network Storage 4 Slot	Rugged 8-channel sFPDP recorder
Flight Qualified Data Recorder and Playback System	Rugged, flight qualified data recorder for ISR Applications
Portable Streaming Data Recorder	High-volume sFPDP, 1 or 10 Gbps Ethernet streaming data recorder

Streaming Data Recorders

Streaming data recorders are high-volume, data recording subsystems in ready-to-go COTS configurations. These data recording and playback systems support multiple I/O options such as Gigabit Ethernet (GbE), 10 GbE, and Serial FPDP (sFPDP). Rack mount recorders are scalable both in the number of channels as well as the storage capacity. Space saving internal storage drives as well as large volume external storage systems are also available. Highly-accurate time stamping enables multiple-channels of data to be played back.

Product	Description
MCSR	Multi-Channel Synchronized Recorder system for sFPDP, Ethernet, and 10 GbE

Video Recorders

Curtiss-Wright's range of video recorders allows one or more video streams to be recorded for debrief, training or evidential purposes. A recorder may be connected to a video distribution unit to allow selection of a specific video stream to be captured, or routed to the output of a mission display to enable an accurate copy of the screen content to be seen by the operator and be recorded. Widely available flash storage technology is used for easy removal at the end of a mission for transfer onto a computer or permanent archive.

Curtiss-Wright video recorders offer the following features as standard:

- Fully rugged construction
- DZUS-mounting
- High capacity flash storage
- Audio recording
- Controllable from Curtiss-Wright displays
- NVG-compatible lighting

Part Number	Description	Interfaces	Channels
VRDV-3500	SD recorder	CVBS, Y/C	1
VRDV-4010	Dual SD recorder	CVBS, Y/C	2
VRDV-5004	HD recorder	HD-SDI	1
VRDV-7000	Dual HD recorder	CVBS, Y/C, VGA, HD-SDI	2



Flight Data Recorders

Aircraft OEMs and operators who want flight data recorders need to meet certain regulations. These can change and it can be difficult to ensure your investment will be future proof. For older aircraft, high maintenance costs, lack of functionality or the push to upgrade systems and reduce weight can mean a new recorder is required.

Curtiss-Wright has been designing cockpit voice and flight data recorders for over 60 years. Our Fortress product line today meets all current and anticipated regulations (including ED-112A and 25 hour voice / datalink recording). They are designed to be compact and lightweight and have a modular interface design to allow rapid customization for particular aircraft needs. This modularization facilitates additional functionality which can help reduce LRU count by integrating functionality into the recorder to further lower weight and free up space and can add functionality such as image recording, encryption and additional data for programs such as usage monitoring.

Features

- Combined voice, data and datalink recording (image and data acquisition options available)
- ED-112A compliant, meets upcoming 25 hour CVR requirements
- Compact and lightweight
- Integrated webserver for fast and free data download



Product	Combined CVR*/FDR	Datalink ARINC 429	Airborne Image Recorder (AIR)**	FDR Data Acquisition
Fortress 757	FDR: 25 h CVR: 25 h	25 h	2 h	ARINC 717 @ 8,192wps, 1 x tachometer, 1 x tri-axial accelerometer input
Fortress DAFR	FDR: 25 h CVR: 25 h	25 h***	2 h	4 x ARINC 429 or dual redundant ARINC 664 p7 via 14 virtual links, 1 x tachometer, 1 x tri-axial accelerometer.
Fortress OEM	FDR: 25 h CVR: 25 h	25 h	2 h	1 x tachometer, 1 x tri-axial accelerometer, custom data acquisition via external modules
Fortress LITE	FDR: 25 h CVR: 25 h	25 h	2 h	FDR- ARINC 717 @ 8,192wps or dual redundant ARINC 664 p7 via 14 virtual links
Fortress CPMM		-	-	Crash Protected Memory Module stores up to 64 GB of data with read/write of 20 MB/s (burst mode) via QSPI interface
MPFR	FDR: 25 h CVR: 2 h	-	-	ARINC 717, 1 x tachometer
EMPFR	FDR: 25 h CVR: 2 h	2 h	-	ARINC 717, 1 x tachometer
DAFR	FDR: 25 h CVR: 2 h	-	-	3 x ARINC 429, 6 x discrete, 4 x analog, 1 x accelerometer, 1 x tachometer

* Analog audio via 1 area microphone, 3 crew channel

** 2 x 1080p channels at 16 FPS

*** Datalink recording via ARINC 664p7

Flight Data Recorder Accessories

Curtiss-Wright offers equipment to support the flight data recorder products including a cockpit control unit (test and fault indication, voice erase, headset jack, and microphone preamp), a cockpit area microphone, a recorder independent power supply, crash damage recovery equipment, and a recorder monitoring and download unit. The PGS turnkey suite of tools enables rapid and clear interpretation of flight data and limits exceeded and comprises all the necessary editors and tools to simplify every day flight data processing.

Highly Configurable EFDMU and FDAU

Imagine you could replace your obsolete flight data system with a low-development, low size, weight and power (SWaP), rugged system, and that it could acquire data from a myriad of modern (and not so modern) analog and digital interfaces. Avionics integrators with this ability, dramatically mitigate obsolescence and maintenance risks for their platforms. The resulting reduction of recurring and non-recurring costs help aircraft assets to remain economically viable into the future.

These capabilities and benefits are made possible with Curtiss-Wright's Enhanced Flight Data Management Unit (EFDMU) and Flight Data Acquisition Units (FDAU). Each LRU is built using a standard catalog of 100+ modular interfaces and pre-configured by our applications integration team. Input interface options include all major avionics bus families and all major analog sensor/transducer types.

Acquired data can be transmitted to ED-112 compliant FDRs, recorded to removable quick-access CompactFlash® memory cards or transmitted via network devices. End-users also have the option of hosting program specific applications within their systems, such as an Aircraft Conditioning Monitoring System (ACMS) or an iVHM (integrated Vehicle Health Management) system.

EFDMU
Flexible ARINC-600 Data
Management Solutions



KAM-500
Data Acquisition Systems





Mission Computer and
Switch/Router



6U Physical
Layer Switch



Ultra Small Form
Factor Switch

NETWORKING

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.

Optimized for the SWaP constraints of civil and military platforms, these robust IP networking solutions support advanced in-vehicle and airborne LAN switching/WAN routing requirements.

New platforms and technology refresh efforts routinely leverage these solutions to facilitate the integration of C4ISR systems, eliminate communication stovepipes, and deliver new information sharing capabilities.

From simple, plug-and-play unmanaged Layer 2 switches to high-bandwidth managed Layer 3 Gigabit / 10 Gigabit solutions and even ruggedized Cisco IOS technology-based options, Curtiss-Wright has a broad array of rugged COTS IP networking solutions to meet your application requirements.

- Broad array of affordable and secure rugged COTS IP networking solutions
- Capabilities for interconnecting cards, sensors and processors through switched Ethernet links
- SWaP optimized mechanical designs MIL-STD / DO-160 pre-qualified for demanding vehicle and aircraft platforms

Physical Layer Switches

Curtiss-Wright's scalable, versatile, multi-purpose physical layer switches are ideal for test labs, media conversion and a variety of other applications. They provide protocol transparent, low-latency switching for digital signals up to 2.5 Gbps.

Product	Form Factor	Interface Type	Number of Ports	Ruggedization
VLX2500	6U VME, optional 19" 1U chassis	Any digital signal up to 2.5 Gbps	8 or 16 ports	Air cooled

Rugged Switch/Router Systems

Product	Function	Switch Ports	Router Ports	Cisco IOS	Size & Weight
DuraMAR 31-5915	Router	3 x 10/100	2 x 10/100 dedicated uplink ports	Yes	87 in ³ , 3.5 lb 1426 cm ³ , 1.6 kg
DuraMAR 5915 0X Series	Router	3 x 10/100	2 x 10/100 dedicated uplink ports	Yes	112 in ³ , 4.0 lb 1835 cm ³ , 1.8 kg
DuraMAR 5915 2X Series	Router, Cisco switch	19 x 10/100; 2 x GbE	2 x 10/100 dedicated uplink ports	Yes	211 in ³ , <9 lb 3458 cm ³ , <4.0 kg
DuraMAR 5915 3X Series	Router, Vitesse GbE switch	2 x 10/100; 19 x GbE	2 x 10/100 dedicated uplink ports	Yes	200 in ³ , <9 lb 3227 cm ³ , <4 kg
DuraWORX 8043	Mission computer, router, managed switch	2 to 20 x 10/100/ GbE	2 x 10/100	Yes	278 in ³ , 12.5 lb 4556 cm ³ , 5.6 kg 232 in ³ , 9.5 lb 3802 cm ³ , 4.3 kg
DuraWORX 8041	Mission computer, router, managed switch	2 to 20 x 10/100/ GbE	2 x 10/100	Yes	278 in ³ , 12.5 lb 4556 cm ³ , 5.6 kg 232 in ³ , 9.5 lb 3802 cm ³ , 4.3 kg
DuraNET 10-10	Unmanaged switch	5 x 10/100	-	-	99 in ³ , 3.5 lb 1622 cm ³ , 1.6 kg
DuraNET 1059	Unmanaged switch	5 x 10/100	-	-	124 in ³ , 1.9 lb 2032 cm ³ , 0.9 kg
DuraNET 20-11	Managed switch with static routing	8 x GbE	8 x GbE (static routing)	-	10 in ³ , 0.5 lb 164 cm ³ , 0.2 kg
DuraNET 20-12	Managed switch with static routing	6 x 10/100	6 x 10/100 (static routing)	-	10 in ³ , 0.5 lb 164 cm ³ , 0.2 kg
DuraNET 1268	Lightly managed switch	10 x GbE	-	-	204 in ³ , 4.8 lb 3343 cm ³ , 2.1 kg
DuraNET 20-10	Managed switch with static routing	20 x GbE	20 x GbE (static routing)	-	112 in ³ , 4.0 lb 1835 cm ³ , 1.8 kg
DuraNET 30-2020	Managed switch with static routing	17 x 10/100; 2 x GbE	17 x 10/100 + 2 x GbE (static routing)	Yes	126 in ³ , 4.4 lb 2065 cm ³ , 2.0 kg
DuraNET 3000	L2 managed switch; L2/L3 switch/router	8/16/24 x 10/100; 2 x GbE	8/16/24 x 10/100; 2 x GbE	Yes	10-port: 220 in ³ , 7 lb 3605 cm ³ , 3.2 kg; 18-port: 275 in ³ , 9.5 lb 4506 cm ³ , 0.2 kg; 26-port: 283 in ³ , 10 lb 4638 cm ³ , 4.5 kg
DuraNET 4948	L2/L3 managed switch/ router	49 x GbE; 3 x 10 GbE	49 x GbE; 3 x 10 GbE	Yes	1519 in ³ , 26 lb 24892 cm ³ , 11.8 kg
Digital Beachhead DuraDBH-672	Managed switch with static routing, vehicle computer, A-PNT	16 x GbE	16 x GbE (static routing)	-	< 125 in ³ , < 4.0 lb < 2048 cm ³ , < 1.8 kg
Digital Beachhead DBH-670	Switch with static routing and vehicle computer, A-PNT	16 x GbE	16 x GbE (static routing)	-	236 in ³ , 6.5 lb 3867 cm ³ , 3.0 kg
SMS-652	Switch with static routing	16 x GbE	16 x GbE (static routing)	-	178 in ³ , 5 lb 2917 cm ³ , 2.2 kg



Mission Computer Server



Miniature Mission Computer



Multi-Platform Modular Computer

MISSION COMPUTERS

Curtiss-Wright embedded systems specialists can apply their decades of experience to address your system integration and program management requirements. This helps you maximize your COTS content or leverage an existing custom solution. You can build your own application using one of our many generic systems, or use our expertise to create specific system solutions, with tailored, optimized functionality for a specific platform or program.

Products include rugged COTS small form factor (SFF) modular mission computer subsystems (Parvus DuraCOR) that feature expandable I/O card and data storage architectures with powerful graphics and data processing capabilities together with ultra-reliable mechanical robustness pre-qualified to MIL-STDs and DO-160 for extreme military and aerospace use. MPMC products are packaged COTS systems comprised of VPX or VMEbus backplanes housed in rugged chassis fully pre-configured with power supplies. MPMC systems offer the unprecedented processing power and standard interfaces required by modern mission computers.

Features

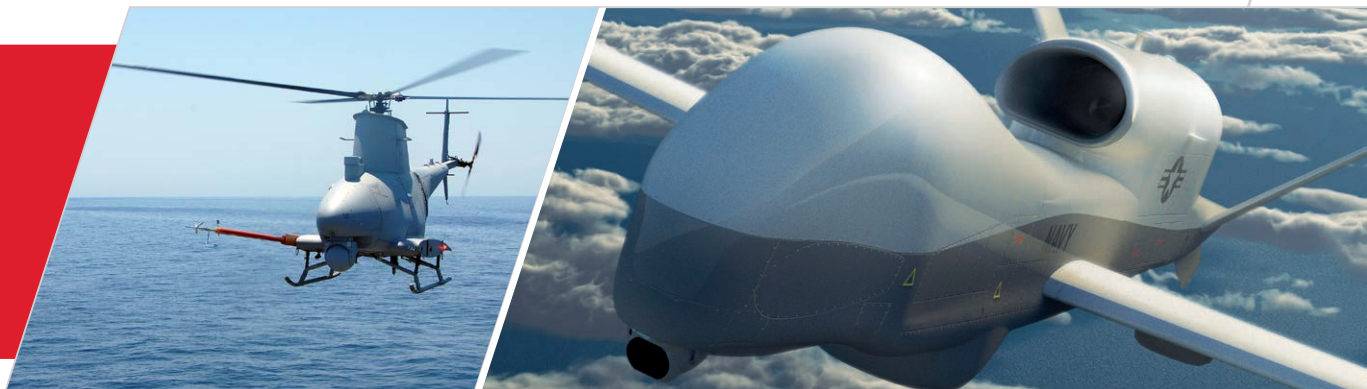
- Rugged COTS mission computer subsystems
- Environmentally-hardened subsystem tailored to specific needs
- Field-tested, MIL-STD qualified mission processors

Pre-integrated, pre-qualified subsystems tailored by the factory, results in customers dramatically reducing scheduling risk and program management overhead, while maximizing use of open architecture COTS technologies. Each unit features electrical/mechanical I/O expansion capabilities that enable rapid integration of payload-specific I/O interfaces for avionics, vetronics, situational awareness and other applications.

Small Form Factor Mission Computers (Parvus DuraCOR / DuraWORX)

Curtiss-Wright's rugged, COTS, SFF, modular, mission computer subsystems in the Parvus DuraCOR and DuraWORX product lines feature scalable I/O card and data storage architectures with powerful graphics and multi-core processing capabilities. Ultra-robust from the inside out they address SWaP-C optimization challenges and reduce lead time and program risk by leveraging an ecosystem of open architecture add-on I/O modules, and Curtiss-Wright's responsive, cost-competitive application engineering services, to deliver Modified COTS (MCOTS) variants quickly and without a traditional NRE fee.

Product	Processor	Memory	Chassis	Qualification Certs	Expansion Bus	Expansion Slots	I/O	Power
DuraCOR XD1500	Xeon D-1559	64 GB / 128 GB	Small form factor	MIL-STD-810G, 461G, 1275D, 704F, DO-160	Mini-PCle, XMC	2 MiniPCle	10 GbE, GigE USB, audio, GPIO, video, XMC	65W
DuraCOR 8043	Mobile Xeon Gen 6	32 GB	Small form factor	MIL-STD-810G, 461G, 1275D, 704F, DO-160	PCle104, MiniPCle	2 MiniPCle, 5/3/0 PCle104	GigE, USB, COM, video, audio, GPIO	65W
DuraWORX 8043	Mobile Xeon Gen 6	32 GB	Small form factor	MIL-STD-810G, 461G, 1275D, 704F, DO-160	PCle104, MiniPCle	2 MiniPCle, 5/3/0 PCle104	Cisco router + switch + mission computer I/O	90-125W
DuraCOR 8042	Core i7 5th Gen	32 GB	Small form factor	MIL-STD-810G, 461G, 1275D, 704F, DO-160	PCle104, MiniPCle	2 MiniPCle, 5/3/0 PCle104	GigE, USB, COM, video, audio, DIO	65W
DuraCOR 8041	Core i7 Gen 4	16 GB	Small form factor	MIL-STD-810G, 461F, 1275D, 704F, DO-160	PCle104, MiniPCle	2 MiniPCle, 5/3/0 PCle104	GigE, USB, COM, video, audio, DIO	65W
DuraWORX 8041	Core i7 Gen 4	16 GB	Small form factor	MIL-STD-810G, 461F, 1275D, 704F, DO-160	PCle104, MiniPCle	2 MiniPCle, 5/3/0 PCle104	Cisco router + switch + mission computer I/O	90-125W
DuraCOR 80-40	Core i7 Gen 2	8 GB	Small form factor	MIL-STD-810G, 461F, 1275D, 704F, DO-160	PCle104	5/3/0 PCle104	GigE, USB, COM, video, audio, DIO, PS2	50W
DuraCOR 312	NVIDIA TX2i (Arm Cortex A-57)	4 GB	Ultra small form factor	MIL-STD-810G, 461F, 1275D, 704F, DO-160	MiniPCle	3 MiniPCle	GigE, USB, COM, video, audio, DIO	20W
DuraCOR 311	Atom 3845	4 GB	Ultra small form factor	MIL-STD-810G, 461F, 1275D, 704F, DO-160	MiniPCle	3 MiniPCle	GigE, USB, COM, video, audio, GPIO	15W
DuraCOR 310	i.MX6 Arm Cortex-A9	2 GB	Ultra small form factor	MIL-STD-810G, 461F, 1275G, 704F, DO-160	MiniPCle	2 MiniPCle	GigE, USB, Serial, video, audio, GPIO, CAN	10W



Multi-Platform Mission Computers

Curtiss-Wright's Multi-Platform Mission Computer (MPMC) product family consists of fully integrated computing subsystems ready for deployment. MPMC products are packaged COTS systems comprised of VPX or VMEbus backplanes housed, in rugged chassis, fully pre-configured with power supplies and high performance Curtiss-Wright computing boards, offering a wide range of I/O. Additionally, they offer the high processing power and standard interfaces required by modern mission computers.

MPMC systems deliver off-the-shelf system solutions to speed deployment of critical applications for constrained platforms such as combat vehicles, helicopters and UAVs. Packaged in rugged enclosures, MPMC systems are designed to meet the harsh environments of military and aerospace computing applications including temperature extremes, altitude, voltage spikes, shock, vibration, and more.

Features

- COTS or Modified COTS rugged conduction-cooled systems
 - 1 to 7 slots
 - VPX or VME backplanes
 - MIL-C-38999 connectors and high density alternatives
- Power supply
 - 50W to 800W (800+ W power supplies available for larger systems)
- Processing
 - Power Architecture
 - Intel
 - Arm
- I/O
 - Graphics and video
 - CANbus
 - MIL-STD-1553
 - ARINC 429
- Removable storage option

XMC/PMC-based Integrated Systems

Product	MPMC-9020
Slot Count	2 mezzanine slots
Standard	XMC or PMC
Volume/ Dimensions	150 in ³ , 2.6 x 10.5 x 5.5" 2458 cm ³ , 6.6 x 26.9 x 14.0 cm
Weight ¹	3 lb (1.4 kg)
Max Power @ 55°C ²	55W NC
Processing	Xilinx Virtex FPGA
I/O	GbE, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL-STD-1553, NTSC Video, DVI, VGA, RS-170
Built-in Features	1 x Controller/bridge 2 x Personality modules for mezzanine I/O routing
Cooling	Natural convection
Qualification	MIL-STD-810, 461, 704

Notes:

1. 2 x MilCAN-A with offload, 16 x ARINC-429 TX/RX selectable, dual MIL-STD-1553, Video Capture: DVI, PAL, NTSC, STANAG-3350, SDI, HD-SDI
2. CP = Cold Plate, NC = Natural Convection, Fan = Forced Convection, LC = Liquid Cooled.



6U-based Integrated Systems

Product	MPMC-961x	MPMC-962x	MPMC-965x	MPMC-9655	MPMC-967x
Slot Count	6U 1 slot	6U 2 slots	6U 5 slots	6U 5 slots	6U 7 slots
Standard	VME, VPX, OpenVPX	VME, VPX, OpenVPX	VME, VPX, OpenVPX	Packaged, VME, VPX, VXS	VME, VPX, OpenVPX
Volume/ Dimensions	431 in ³ 7063 cm ³ 3.9 x 9.6 x 11.5" 9.9 x 24.4 x 29.2 cm	602 - 819 in ³ 9865 - 13,421 cm ³ NC:12.5 x 5.8 x 8.3" 31.8 x 14.7 x 21.1 cm FC:12.5 x 5.8 x 11.3" 31.8 x 14.7 x 28.7 cm	778 in ³ 12,749 cm ³ 12.5 x 7.5 x 8.3" 31.8 x 19.1 x 21.1 cm	680 in ³ 11,143 cm ³ 11.93 x 7.5 x 7.6" 30.3 x 19.1 x 19.3 cm	928 in ³ 15,207 cm ³ 12.5 x 9 x 8.25" 31.8 x 22.9 x 21.0 cm
Weight ¹	12 lb 5.4 kg	25-31 lb 11.3 - 14.1 kg	40 lb 18.1 kg	22 lb 10.0 kg	31 lb 14.1 kg
Max Power @ 55°C ²	70W NC	170W NC & FC	600W LC	180W	350W FC
Processing	Intel Xeon, Intel Core i7, NXP 7447/8, NXP8640/1, NXP Power Architecture, Xilinx Virtex FPGA	Intel Xeon, Intel Core i7, NXP 7447/8, NXP8640/1, NXP Power Architecture, Xilinx Virtex FPGA	Intel Xeon, Intel Core i7, NXP 7447/8, NXP8640/1, NXP Power Architecture, Xilinx Virtex FPGA	Intel Core i7, Intel Xeon, NXP Power Architecture	Intel Xeon, Intel Core i7, NXP 7447/8, NXP8640/1, NXP Power Architecture, Xilinx Virtex FPGA
I/O	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL- STD-1553, CANBus, NTSC Video, DVI, VGA, RS-170, A/D, Audio	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL- STD-1553, CANBus, NTSC Video, DVI, VGA, RS-170, A/D, Audio	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL- STD-1553, CANBus, NTSC Video, DVI, VGA, RS-170, A/D, Audio	Ethernet, RS-232, RS-422, RS-485, MIL-STD-1553, NTSC, VGA, (10) A/D, 48 80V DIO, Audio	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL- STD-1553, CANBus, NTSC Video, DVI, VGA, RS-170, A/D, Audio
Built-in Features	50 ms power hold up	2 x additional X/PMC sites, 32 GB flash, 50 ms power hold up, 8-port GbE switch	Fiber switch	Video Crossbar switch Voice/Tone Generator 28VDC 50 ms power hold	2 x additional X/PMC sites, 32 GB flash, 50 ms power hold up, 8-port GbE switch
Cooling	Natural Convection	Natural Convection	-	Forced Air from vehicle	Forced Air
Qualification	MIL-STD-810, 461, 1275, 704, DO-160	MIL-STD-810, 461, 1275, 704, DO-160	-	-	-

Notes:

1. Fully populated system weight
2. CP = Cold Plate, NC = Natural Convection, Fan = Forced Convection, LC = Liquid Cooled.



Courtesy of General Dynamics Land Systems Inc

3U-based Integrated Systems

Product	MPMC-931x	MPMC-932x	MPMC-9335	MPMC-934x	MPMC-935x
Slot Count	3U 1 slot	3U 2 slots	3U 3 slots	3U 4 slots	3U 5 slots
Standard	VPX, OpenVPX	VPX, OpenVPX	VPX, OpenVPX	VPX, OpenVPX	VPX, OpenVPX
Volume/ Dimensions	141 in ³ (2311 cm ³) 3.7 x 4.9 x 7.8" (9.4 x 12.4 x 20.0 cm)	232 in ³ (3802 cm ³) 9.1 x 5.0 x 5.1" (23.1 x 12.7 x 13.0 cm)	250 in ³ (4097 cm ³) 9.3 x 5.5 x 4.9" (23.6 x 14.0 x 12.4 cm)	602 - 819 in ³ (9865 - 13421 cm ³) NC: 12.5 x 5.8 x 8.3" (31.8 x 14.7 x 21.0 cm) FC: 12.5 x 5.8 x 11.3" (31.8 x 14.7 x 28.7 cm)	415 in ³ (6801 cm ³) 10.7 x 5.1 x 7.6" (27.0 x 13.0 x 19.3 cm)
Weight ¹	5 lb (2.3 kg)	13 lb (5.9 kg)	14.5 lb (6.6 kg)	25 - 31 lb (11.3 - 14.1 kg)	16 lb (7.3 kg)
Max Power @ 55°C ²	80W CP	105W NC	225W CP	170W NC & FC	366W FC
Processing	Intel Xeon, Intel Core i7, NXP 7448, NXP MPC8640D, NXP Power Architecture, Xilinx Virtex FPGA	Intel Xeon, Intel Core i7, NXP 7448, NXP MPC8640D, NXP Power Architecture, Xilinx Virtex FPGA	Intel Core i7 Quad-core with NVIDIA Fermi GPGPU	Intel Xeon, Intel Core i7, NXP 7448, NXP MPC8640D, NXP Power Architecture, Xilinx Virtex FPGA	Intel Xeon, Intel Core i7, NXP 7447/8, NXP8640/1, NXP Power Architecture, Xilinx Virtex FPGA
I/O	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL- STD-1553, CANBus, NTSC Video, DVI, VGA, RS-170, A/D	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL-STD-1553, CANBus, NTSC Video, DVI, VGA, RS-170, A/D	Standard fit: 4 x GbE, 2 x MilCAN, other I/O through customization	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL- STD-1553, CANBus, NTSC Video, DVI, VGA, RS-170, A/D, Audio	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MIL- STD-1553, CANBus, NTSC Video, DVI, VGA, RS-170, A/D, Audio
Built-in Features	2 x additional X/PMC sites, 32 GB flash, 50 ms power hold up	2 x additional X/PMC sites, 32 GB flash, 50 ms power hold up	Heater to support cold starts <40°C	2 x additional X/PMC sites, 32 GB flash, 50 ms power hold up	50 ms power hold up
Cooling	Baseplate	Natural Convection	Baseplate	Natural Convection	Forced Air
Qualification	MIL-STD-810, 461, 1275, 704, DO-160	MIL-STD-810, 461, 1275, 704, DO-160	DEF-STAN 00-35 DEF- STAN 61-5 DEF-STAN 59-411	MIL-STD-810, 461, 1275, 704, DO-160	MIL-STD-810, 461, 1275, 704, DO-160

Notes:

1. Fully populated system weight

2. CC - Conduction Cooled, CP = Cold Plate, NC = Natural Convection, Fan = Forced Convection, LC = Liquid Cooled.

Product	MPMC-9355	MPMC-9366	MPMC-9366-0002	MPMC-9336	MPMC-9365
Slot Count	3U 5 slots	3U 6 slots	3U 6 slots	3U 3 slots	3U 6 slots
Standard	VPX, OpenVPX	OpenVPX, Packaged, VPX	OpenVPX, Packaged, VPX	OpenVPX, Packaged, VPX	Packaged, VPX
Volume/ Dimensions	633 in ³ (10,373 cm ³) 12.7 x 5.7 x 8.8" (32.3 x 14.5 x 22.3 cm)	974 in ³ (2473 cm ³) 9.2 x 16.3 x 6.5" (234 x 413 x 164 mm)	879 in ³ (2233 cm ³) 8.3 x 16.3 x 6.5" (212 x 413 x 164 mm)	288.12 in ³ (731.82 cm ³) 4.9" x 9.8" x 6.0" (124 x 248 x 152 mm)	606 in ³ (1539 cm ³) 5.7 x 12.5 x 8.5 (144 x 316 x 216 mm)
Weight ¹	20.5 lb (9.3 kg)	28.7 lbs (13 kg)	28.7 lbs (13 kg)	14.3 lbs (6.5 kg)	22.5 lbs (10.2 kg)
Max Power @ 55°C ²	250W FC	400W CC	400W CC	150W CP	150W CC
Processing	Intel Core i7, NXP Power Architecture, Xilinx Virtex-5 and Virtex-7	NXP Power Architecture, Xilinx Virtex-7	Intel Core i7, NXP Power Architecture	Intel-Core i7 , Xilinx Virtex-7 FPGA	Intel Core i7, Xilinx Virtex-7
I/O	GbE, SATA, RS-232, RS-422, USB, ARINC 429, LVTTTL, MI STD- 1553, NTSC, DVI, VGA, RS-170, A/D, Audio	ADC, RS-232, RS-422, M-LVDS, DAC, GbE, Serial FPDP	RS-422, DVI Video Mirror, Discrete, RS- 232, GbE, USB, DVI, ARINC 429, MIL- STD-1553	GbE, SATA, RS-422, USB, M-LVDS, DVI, ADC, DAC, Clock	GbE, USB, Custom, LVTTTL, GPIO
Built-in Features	28VDC 115VAC 400HZ single phase 115VAC 400HZ three phase 50 ms power hold up SSD option	6 g, 11 ms shock capability , Elapsed Time Indicator, removable memory (SSD) support, heater supports cold starts <-51°C, 50 ms power holdup, UK export controlled	Removable memory (SSD) support, heater supports cold starts <-51°C, 50 ms power holdup, UK export controlled	200 g 3 ms shock capability, low-phase noise clock generator support, removable memory (SSD) support, heater supports cold starts <-51°C, 50 ms power holdup, UK export controlled	50 ms power holdup, UK export controlled
Cooling	Forced Air	Conduction + Fan	Conduction + Fan	Coldplate	Conduction + Fan
Qualification	MIL-STD-810, 461, 704, DO-160	MIL-STD-810G	MIL-STD-810G	MIL-STD-810G	MIL-STD-704F

Notes:

1. Fully populated system weight

2. CC - Conduction Cooled, CP = Cold Plate, NC = Natural Convection, Fan = Forced Convection, LC = Liquid Cooled.



Digital Video Switch



Rugged Mission Display

VIDEO MANAGEMENT

A growing challenge for system integrators is how to get the most effective use out of the proliferating number cameras and displays being deployed without adding more space and weight. The Rugged Video Gateway (RVG) line of small form factor video management solutions is designed specifically to address this challenge, letting system designers quickly and easily route the platform's video sources exactly where they best benefit the operator.

Once flying, direct and indirect light make the mission screen almost impossible to see. The unique combination of new technology, including optically-bonded glass and dual mode NVIS-compatible LED backlighting can minimize this affect. Our new smart displays minimize reflection, even in the brightest conditions by almost 85%, providing anytime readability.

Curtiss-Wright's industry-leading Video Management System (VMS) offers complete surveillance solutions for airborne and other applications. VMS has been successfully fielded in a wide range of demanding applications, including search and rescue and border patrol operations. The equipment can be used with equal effectiveness on both fixed and rotary wing aircraft, and has been deployed by police forces and the military in the USA, Europe and Australia.

Video Distribution

Products	Function
RVG-SA1	Analog Video Switch
RVG-SD1	Digital Video Switch
RVG-FC1	Video Format Converter
VADU-9110	Video Amplifier Distribution Unit (VADU) - simple video distribution unit for smaller systems having limited mission equipment interface requirements
VADU-9111	Video splitter for SD and HD video
VADU-9112	Provides central video distribution of multi format video sources to multiple displays
VDA	Video Distribution Amplifier (VDA) replicates RGB analog video
VDSU-1407	Video Distribution System Unit (VDSU) - analog video distribution unit
VDSU-1420	High Definition digital video distribution unit
VxPoint Video Cross point Switch	Video Distribution 6U VME

Mission Displays

Curtiss-Wright's mission display product family includes a wide range of multi-function rugged LCD displays for use on rotary and fixed-wing aircraft and ground combat vehicles. Our high definition (HD) displays are designed for use with the industry's most popular sensors, including FLIR and long range daylight video cameras.

Our current display product range offers a variety of screen sizes, from 10.4" to 21.5". All our displays feature leading edge functionality such as multiple video inputs, VGA inputs, picture-in-picture facility and video freeze frame. They provide dual-LED backlights with daylight/NVG mode being externally selectable for use with night vision goggles. The displays also feature very high brightness and high contrast for sunlight readability and are ideal for use with our fully integrated VMS.



Features

- Compatible with all major camera turrets
- Compatible with major map computers
- High brightness display for sunlight readability
- Touchscreen for map/computer control and soft buttons for VMS control including switching and recording
- Supports four composite/S-video, two RGBHV/VGA, two HD-SDI video inputs with loop through on selected inputs
- Full quad and picture-in-picture generation
- Freeze frame capability
- Optically bonded glass
- High brightness display for sunlight readability and full NVG compatibility
- Touchscreen and NVG as standard

Part Number	Description	Format	Resolution	Brightness (cd/m2)
AVDU5500	21.5", 54.6 cm HD	16:9 widescreen	1920 x 1080	1000
AVDU4300	17.3", 43.9 cm HD	16:9 widescreen	1920 x 1080	800
AVDU3600	14.1", 35.8 cm WXGA	16:10 widescreen	1280 x 800	1000
AVDU3000	12.1", 30.7 cm WXGA	16:10 widescreen	1280 x 800	1000
AVDU2600	10.4", 26.4 cm XGA	4:3	1024 x 768	1000

Ancillary Video Display Products

To complement our core range of displays, VMS, video recorders and video distribution products, Curtiss-Wright offers additional products to enhance system capabilities. These products include keyboards, video converters, cargo hook cameras, interface units, and recorder and display remote controls.

CAPABILITIES

Curtiss-Wright Defense Solutions demonstrates its unmatched expertise and leadership in our technology and industry specialists, our state-of-the-art manufacturing processes and facilities, and most importantly, in the products and services we deliver to our customers.

Serving as a technology and integration partner to its customers, Curtiss-Wright provides a full range of advanced, highly engineered solutions from modular open systems approach to fully custom optimized solutions. Our capabilities ensure the success of a program's system development and integration while helping to maintain a competitive advantage.

Program Specific Systems

Multi-Platform Mission Management System

Curtiss-Wright Defense Solutions' Multi-Platform Mission Management (MPMM) system was designed from the beginning with high performance computing, ruggedization and flexibility in mind. The MPMM provides the raw horsepower needed for airborne mission management applications.

At the heart of the MPMM System is the Intel Xeon D-1587 System on Chip (SoC) with 128GB of DDR4 SDRAM. The help with the processing, the MPMM can be outfitted with either another Xeon D-1587 or dual NVIDIA Pascal™ P5000 GPUs. Two NVIDIA Pascal GP107s are also included for additional GPU resources. All combined, the MPMM provides over 300 TFLOPS of performance in under thirty pounds!



Software Defined Radio and Electronic Warfare System

Using a COTS-based mission management system as a hardware starting point, a jump-start system significantly speeds and eases the development of a high performance mission processing through pre-qualification, pre-integration and pre-validation of the rugged system. The system integrator customizes the system by adding the application-specific software and/or expanding the base system with additional components required for their sensors and program needs.

Many new Software Defined Radio (SDR) and Electronic Warfare (EW) systems are being deployed on small platforms requiring sophisticated capabilities, such as GigaHertz (GHz) sampling rates and FPGA-based processing to handle the data rates. The Curtiss-Wright VPX3-530 ADC/DAC meets these requirements within a compact 3U OpenVPX form factor, enabling highly effective SDR and EW implementations.

Curtiss-Wright's mid-size SDR and EW System enables customers to select their preferred RF tuner and software applications (i.e. GNU Radio, Red Hawk or SCA). By provides up to sixteen analog inputs (12-bit up to 2 Gsps) and eight (14-bit < 2.8 Gsps output channels), the SDR and EW system is easily able to interface L-band or S-band RF frequencies. The SDR is built from COTS products. The system consists of five 3U VPX modules, one XMC module, a power supply, backplane and front panel assemblies housed in a MPMC-9354 chassis designed to operate in rugged environments.

3U VPX Ground Control System

The Curtiss-Wright Defense Solutions 3U VPX Ground Control System (GCS) provides a flexible and rugged processing system suitable for ground applications such as fire control, turret control, weapons control, and vehicle control. The 3U VPX GCS processing and networking rugged system, provides an affordable hardware and software solution, ideal for space-constrained applications. The 3U VPX Ground Control System includes:

- Control Processor
- VICTORY compliant Gigabit Ethernet Switch
- Power supply
- Dedicated XMC site for hosting VICTORY services

This rugged system is designed for inclusion of future upgrade capabilities, such as support for local/network attached data storage and PMC sites for new I/O solutions.

Sensor Management Computer (SMC)

Curtiss-Wright ground station electronics inherits legacy from our sensor management products. Both ground station electronics and our sensor management family share the same technology building blocks and operate together to provide communication between unmanned aerial vehicles and ground stations. The SMC is part of a network-centric product family and provides the data interface between the ground satellite and Mission Control Element (MCE) computer infrastructure. The SMC's modular design consists of a single/dual VPX based Power Architecture processor, high speed interface suite (Fibre Channel, Gigabit Ethernet, Fast Ethernet, SATA, Serial RapidIO) and support for legacy interfaces such as parallel ECL interface, RS-422, and RS-232. The rugged SMC system is designed to support internal SATA storage media in a 6U VPX form factor for future applications.



Advanced Mission Management Systems (AMMS)

The depth of Curtiss-Wright avionics experience can be exemplified in the Advanced Mission Management System (AMMS). The AMMS unit provides Network-Centric mission management, data collection, and data correlation while incorporating support for red/black separation capability. It is also a total sensor management solution for the end user. The AMMS system is one of the latest network-centric systems responsible for mission management.

AMMS is a VPX-based system that will implement internal volatile storage, new DIO sub-system and Discipline Rubidium Oscillator module, along with latest VPX-based PPC modules and Gigabit Ethernet switches.

High-Density Radar Signal Processing System

Our advanced high performance VPX compute modules and optimized software tools are ideal, cost effective building blocks for multi-mission radar systems. Curtiss-Wright's solution uses standards-based, open architecture VPX modules and software to provide a high-performance, modular, and scalable high-performance embedded computing (HPEC) solution. Additionally, they provide advanced rugged packaging with the additional cost and design advantages of an open architecture.

Video and Image Processing System

Curtiss-Wright has a solid history of providing leading technology for all stages of high performance video and image processing, satisfying the complex processing, data movement and environmental constraints for a wide variety of applications. Video and imaging sensor technology is used in a wide variety of applications ranging from aircraft to shipboard to ground based. What is consistent in all cases is that the processor for these applications must be capable of high performance. Multi-stage solutions often push the envelope on processing, data bandwidth and thermal density.

Engineering and Manufacturing

Curtiss-Wright's engineering and manufacturing capabilities support the entire life cycle of a product and program. Our engineers are experts in display processing, mission computing, sensor processing, network-centric systems, platform level system integration, and embedded hardware optimization. Our design and manufacturing capabilities adhere to the highest industry standards, making our products extremely reliable in the field.

Our Engineering and Manufacturing capabilities include

- Systems engineering
- System integration and test capabilities
- Software engineering
- Mechanical engineering
- Program and application specific development
- Modified COTS (MCOTS)
- Advanced cooling techniques
- CMMI level 3
- Environmental and EMC testing
- System design and consultancy
- Third party product integration

Program Services

Curtiss-Wright is a program-centric organization. Each program is assigned a dedicated Program Manager who is responsible for the program performance. Our responsive organizational structure provides close management of all project activities and agile decision making.

In addition, we employ a complete set of management tools required to make our customer's program a success. Program services and capabilities include:

- Program Management: Our team has the technical and management resources required to design, build, test, deliver, and support integration and testing of program requirements.
- Contract Mandated Reporting: Curtiss-Wright provides programmatic and technical reporting based on the program requirements, ranging from government and military customers to commercial users and other agencies that may require customized reporting processes.
- Earned Value Management Systems (EVMS): The Curtiss-Wright team has an EVMS which meets the intent of the Industry Guidelines for Earned Value Management Systems ANSI/EIA-748-98.



Support Services

Curtiss-Wright ensures that our customers have the support required during and after their system's development.

Support services offered include

- Commercial to fully-qualified system support
- Product training and field support
- Product life cycle management and configuration management
- Embedded partners
- Whether it is product documentation, customer training, obsolescence management or technology access, we have every aspect of your system covered.

Safety Certifiable

Certifying avionics subsystems to DO-254/DO-178 standards can be a costly and time consuming process. This is especially true for developments where a customized product is required. Curtiss-Wright has decades of experience developing safety certified and low risk certifiable products from DO-254/DO-178B Design Assurance Levels (DAL) A to E. Through this experience, we have accumulated mature processes, hardware design and software development techniques that allow us to reduce your certification risk, project costs and accelerate your time to market.

In addition to certified avionic subsystems, such as air data computers, fire and ice protection systems, Curtiss-Wright has developed "certifiable" COTS hardware and software products which utilize re-usable design artifacts. These artifacts are designed in line with Integrated Modular Architecture (IMA) and ARINC 653 requirements. Thus systems, such as data concentrators, mission computers and multi-function controllers, can be delivered to meet your unique requirements using proven hardware elements and certified operating systems. This helps you get your critical aviation systems fielded sooner.





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