



NEWS RELEASE

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Curtiss-Wright Takes Ultra-Small Mission Computer Performance to New Heights with Upgraded 1.5 Teraflop Supercomputer-Class ARMv8-based Architecture

Industry's most powerful, compact COTS mission computer now features NVIDIA TX2 with 6-core 64-bit ARMv8 processor, NVIDIA Pascal GPU, double the RAM/Flash memory and addition of vehicle CANbus interfaces

ARMY AVIATION MISSION SOLUTIONS SUMMIT, NASHVILLE, Tenn. (Booth #349) – April 26, 2017 – [Curtiss-Wright's Defense Solutions division](#) today announced that it has further enhanced what was already the industry's most powerful and flexible ultra-small form factor (USFF) mission computer, the **Parvus® DuraCOR® 312**. The rugged COTS subsystem is designed for system integrators seeking to deploy the most powerful yet size, weight, and power (SWaP) optimized mission computer available for use on air, land, and maritime platforms. The upgraded mission computer's performance has been boosted to 1.5 Teraflops with an upgrade from its earlier NVIDIA® Jetson™ Tegra® X1 to the latest Tegra® X2 (TX2) “supercomputer-on-a module”, delivering the smallest rugged TX2-based modular solution available on the market. The unit's heterogeneous multi-processing (HMP) architecture delivers the highest FLOPS per watt available in a rugged COTS highly scalable system. It enables system designers to rapidly deploy supercomputer-class processing in a proven, high-Technology Readiness Level (TRL) subsystem that eliminates design risk and NRE costs.

“We are very excited to announce the enhanced Parvus DuraCOR 312's support for NVIDIA's Pascal-based TEGRA X2 architecture, bringing unmatched supercomputer class performance and power efficiency to aircraft and vehicle applications,” said Lynn Bamford, Senior Vice President and General Manager, Defense Solutions division. “This compact unit takes ultra small form factor processing to a whole new level, delivered in a lightweight chassis ruggedized to comply with stringent MIL standards for harsh environmental deployment.”

Weighing less than 2.0 lb in weight and requiring less than 20 W of power, the extremely compact DuraCOR 312 measures just 5.2” x 5.4” x 2.0”. The unit uniquely combines the TX2's 6-core 64-bit ARM® Cortex-A57 + Denver 2 (ARMv8) processors and 256-core NVIDIA CUDA-core Pascal GPU signal processor with a comprehensive set of base I/O (including Ethernet, serial, USB, DIO and video ports) and a wide range of I/O and storage expansion options. What's more, the upgraded DuraCOR 312 delivers double the RAM memory capacity and

onboard Flash storage, combined with native vehicle CANbus support, compared to previous TX1-based solutions.

The DuraCOR 312 uniquely incorporates ruggedization features that extend the high-performance and power-efficient NVIDIA TX2 architecture beyond factory-rated temperature ranges. This enables the unit to perform reliably in extreme environments, making it well suited for on-board civil and military aircraft and vehicle platforms. In addition, the DuraCOR 312 offers unique system features for MIL-Aero use, including 50 ms power hold-up for MIL-STD-704F aircraft power switch-over requirements, as well as high-speed Non-Volatile Memory Express (NVMe) data storage, removable SATA3 storage, and expansion slots for avionics databus and other platform-specific I/O modules.

The DuraCOR 312 is ideal for use on SWaP-sensitive deployed platforms such as civil and military ground vehicles, fixed and rotary-wing aircraft, and maritime vessels, both autonomous and manned, that require in-vehicle tactical mission processing (server/computer) or C4ISR technology. It delivers high-performance embedded computing (HPEC) and general-purpose graphics processing for compute-intensive applications such as ISR/EW/targeting systems and deep learning. Thanks to its Pascal GPU architecture's Max-Q and Max-P dynamic energy management profiles, the DuraCOR 312 can deliver up to double the machine learning/AI application performance or power efficiency of TX1 systems.

Built Rugged for Harsh Environments

The DuraCOR 312 eliminates design risk with extensive environmental, power, and EMI compliance testing. Its miniature rugged chassis features MIL-grade connectors and compliance to extremely demanding MIL-STD-810G, MIL-STD-461F, MIL-STD-1275D, MIL-STD-704F and RTCA/DO-160G environmental, power and EMI conditions, including high altitude, wide temperature, humidity, extreme shock and vibration and noisy electrical environments. The unit also provides an aerospace-grade power supply in a fanless IP67-rated mechanical package that handles harsh shock and vibration and operates over extended temperatures without a cold plate or airflow.

Unmatched I/O Flexibility

The DuraCOR 312's ultra-reliable, ultra-flexible modular design boasts rugged removable Flash storage, multiple Mini-PCIe I/O card expansion, including internal M.2, mSATA and microSD card slots, and a MIL and commercial aerospace-grade power supply in a mechanical package that requires no fans, operates over extended temperatures, and handles harsh shock/vibration. Standard system I/O interfaces include multiple Gigabit Ethernet, USB 3.0, USB 2.0, HDMI, Audio, GPIO, and serial ports. Like other Parvus DuraCOR models, the DuraCOR 312 supports an ecosystem of rugged COTS Mini-PCIe modules (including MIL-STD-1553, ARINC 429 avionics databus interfaces). Optional removable 2.5" SATA SSD storage supports high capacity storage and information assurance requirements.

If required, Curtiss-Wright's responsive, cost-competitive application engineering services deliver Modified COTS (MCOTS) variants quickly and without a traditional NRE fee.

Initial software support includes pre-loaded NVIDIA Linux® for Tegra (L4T) based on Ubuntu, which supports common APIs and NVIDIA development tool chain for Deep AI learning. The unit's NVIDIA Maxwell GPU architecture supports NVIDIA CUDA 7.0, OpenGL® 4.5, and OpenGL ES 3.1.

The Parvus Family of Miniature COTS Subsystems

The DuraCOR 312 complements Curtiss-Wright's previously announced [DuraCOR 310 and DuraCOR 311 mission computers](#) and the [DuraNET 20-11 miniature Ethernet Switch](#).

Sales inquiries: Please forward all Sales and reader service inquiries to ds@curtisswright.com.

For more information about Curtiss-Wright's Defense Solutions division, please visit www.curtisswrightds.com.

About Curtiss-Wright Corporation

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