



NEWS RELEASE

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Curtiss-Wright Adds NVIDIA® GPGPU Processor Module to its Growing Roster of OpenVPX™ Solutions Developed in Alignment with the SOSA™ Technical Standard

New SOSA aligned GPGPU modules expand Curtiss-Wright's family of high-performance size, weight, and power (SWaP)-optimized embedded computing (HPEC) processors for AI/ML applications

ASHBURN, Va. – APRIL 29, 2021 – Curtiss-Wright's Defense Solutions division, a trusted leading supplier of rugged ISR and EW processing modules and systems, today introduced its first 3U OpenVPX GPGPU processor module designed in compliance with the U.S. Army CCDC C5ISR Center's C4ISR/EW Modular Open Suite of Standards (CMOSS) and aligned with standards currently being defined by [The Open Group Sensor Open Systems Architecture™ \(SOSA\) Consortium](#). Developed to support compute-intensive ISR and EW systems, this fully rugged SOSA aligned variant of the [VPX3-4935](#), an NVIDIA Quadro® Turing™ based GPGPU processor card module, is the latest addition to Curtiss-Wright's growing roster of [CMOSS](#)-compliant / SOSA aligned hardware. The SWaP-optimized VPX3-4935 is ideal for accelerating tensor/matrix computation used for deep learning neural network inference used in deployed artificial intelligence (AI) and machine learning (ML) applications requiring TFLOPS of accelerated processing. These applications include high-performance radar, SIGINT, EO/IR, data fusion ingest, processing and display, and autonomous vehicles.

“The addition of embedded GPGPU AI engines to our growing family of SOSA aligned hardware solutions further extends our commitment to lead the industry with best-in-class HPEC solutions

designed in alignment with the SOSA Technical Standard,” said Chris Wiltsey, Senior Vice President and General Manager, Curtiss-Wright Defense Solutions.

About the VPX3-4935

The VPX3-4935 SOSA aligned module feature an NVIDIA Quadro Turing TU104 (RTX5000E) GPU that delivers 11.2 TFLOPS/TIPS performance. It provides 3072 CUDA® cores, 384 tensor cores, and 48 ray-tracing (RT) cores. Designed to work in conjunction with NVIDIA TensorRT™ and CUDA cores, the module’s Turing tensor cores add INT8 and INT4 matrix operation while continuing support for high-precision workloads. These state-of-the-art GPGPU modules further extend Curtiss-Wright’s proven leadership as a supplier of the most advanced computing solutions for embedded ISR applications. To meet demanding rugged military and aerospace specifications, these GPGPU boards feature a chip-down design.

Complete System-Level HPEC Solutions

The VPX3-4935 modules are fully interoperable with Curtiss-Wright’s broad family of [3U OpenVPX solutions](#). For example, SWaP-constrained systems can pair the single VPX3-4935 modules with the Intel® Xeon® D processor-based CHAMP-XD1 DSP engine, which together can augment the powerful sensor processing capabilities of our Xilinx® FPGA-based transceiver modules.

OpenHPEC™ Accelerator Suite™ Support

Curtiss-Wright HPEC modules and systems are supported by the [OpenHPEC Accelerator Suite](#) of best-in-class software development tools. These powerful tools enable system developers to develop their software faster. For example, the suite includes the powerful Bright Cluster Manager from Bright Computing, an NVIDIA partner. Bright Cluster Manager provisions and monitors both the CPU and GPU boards, and includes a fully configurable module environment. The OpenHPEC tool suite includes Bright’s deep learning libraries and tools from both Intel and NVIDIA, including Caffe and TensorFlow. It also provides the Arm® Forge suite, which enables true system level debugging and profiling for both CPU and GPUs, and supports MPI, OpenMP, and ACC.

For high-speed, low-latency, peer-to-peer communications, the OpenHPEC Accelerator Suite also includes the [Dolphin® eXpressWare PCIe® communication library](#), which hides the complexities of directly programming the system’s PCIe devices. In addition to supporting GPU sharing between the CPUs, the Dolphin library also supports both CPU direct and remote direct memory access (RDMA). Use of the OpenHPEC Accelerator Suite simplifies, speeds, and lowers the cost of ISR application

development. These tools deliver the benefits of open standard High Performance Computing (HPC) software to the COTS market to effectively remove risk when developing large scale embedded computer clusters.

Resulting from its Reseller Agreement with WOLF Advanced Technology, the VPX3-4935 modules have been pre-validated. They complement Curtiss-Wright's previously announced family of NVIDIA Turing GPGPU modules by speeding and easing the integration of HPEC solutions into SOSA aligned deployed systems.

Curtiss-Wright CMOSS-compliant/SOSA aligned available hardware

Curtiss-Wright offers [a broad complement of open architecture solutions for CMOSS and SOSA aligned systems](#), including high-performance single board computers (SBC), DSP, GPGPU, [A-PNT](#) timing, and network switch cards. In addition, Curtiss-Wright provides CMOSS-compliant lab development chassis and rugged deployable multi-slot chassis. System integrators are encouraged to contact Curtiss-Wright system architects and C5ISR/EW Modular Open Suite of Standards (CMOSS) product managers at ds@curtisswright.com to schedule a discussion about currently available and forthcoming embedded modules.

The Open Standards Leader

Curtiss-Wright is an active contributor to the definition and advancement of the open standards included in CMOSS and those being defined by the SOSA™ Consortium. Curtiss-Wright has been a leading participant in the development of the CMOSS and SOSA standards since the inception of both initiatives and is a key participant in several SOSA Consortium working groups (including holding a chair position in the SOSA Consortium). In addition, the company has been a leading contributor to the VITA Standards Organization (VSO) which oversees the definition of the OpenVPX, PMC, XMC, and FMC form factor standards that provide the foundation of both CMOSS and SOSA technical standards. This makes Curtiss-Wright ideally positioned to work with customers to help guide the development and success of their CMOSS- and SOSA aligned applications.

For additional information, please visit www.curtisswrightds.com, LinkedIn, and Twitter @CurtissWrightDS.

About Curtiss-Wright Corporation

Curtiss-Wright Corporation is a global innovative company that delivers highly engineered, critical function products and services to the commercial, industrial, defense and energy markets. Building on the heritage of Glenn Curtiss and the Wright brothers, Curtiss-Wright has a long tradition of providing reliable solutions through trusted customer relationships. The company employs approximately 8,200 people worldwide. For more information, visit www.curtisswright.com.

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