



NEWS RELEASE

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Curtiss-Wright Collaborates with Green Hills Software to Provide Safety Certifiable COTS Intel® Multi-Core Solutions

New Mobile Xeon processor-based VPX3-1220 is first Curtiss-Wright RTCA/DO-254 safety certifiable COTS SBC to support Green Hills Software's RTCA/DO-178B Level A certified multi-core INTEGRITY-178 tuMP™ RTOS

ASHBURN, Va. – November 7, 2016 -- [Curtiss-Wright's Defense Solutions division](#) today announced that it is collaborating with Green Hills Software to support the RTCA/DO-178C certified multi-core [INTEGRITY-178 tuMP \(Time-Variant Unified Multi Processing\) real-time operating system \(RTOS\)](#) on its [safety certifiable COTS single board computers \(SBC\)](#). The first Curtiss-Wright product to support Green Hills Software's safety certified multi-core RTOS is the recently introduced [3U OpenVPX™ VPX3-1220](#), an RTCA/ DO-254 Design Assurance Level (DAL) C safety certifiable SBC. Based on Intel's latest generation Mobile Xeon® processor E3 v5 (formerly known as "Skylake-H"), the rugged VPX3-1220 features a low-power version of the Xeon processor and delivers high performance quad-core x86 processing with integrated graphics at typically 50% the power levels of previous solutions. The availability of INTEGRITY-178 tuMP for the VPX3-1220 provides the ideal combination for system integrators that require optimal throughput and industry-leading SWaP benefits for their Intel-based multi-core critical system.

The announcement follows Green Hills Software's recent completion of all RTCA/DO-178B Level A certification requirements for INTEGRITY-178 tuMP. The combination of Curtiss-Wright's RTCA/DO-254 safety certifiable SBCs and artifact kits, with a board support package (BSP) provided by Green Hills Software for its safety certified multi-core RTOS will significantly reduce the time and cost for integrators to certify avionics systems deployed on military and commercial manned and unmanned aircraft.

Designed with an RTCA/DO-254 design process from the beginning of the development cycle, Curtiss-Wright's safety certifiable multi-core processor SBCs, when combined with Green Hills Software's INTEGRITY-178 tuMP RTOS, will provide system designers with a complete COTS hardware/software solution for avionics systems. To speed and ease the safety certification process, an RTCA/DO-254 data artifact package for each SBC, and a certifiable board support package (BSP) with RTCA/DO-178 artifacts for the multi-core RTOS, will be available.

“We are very excited to collaborate with Green Hills Software to bring the performance and cost benefits of safety certifiable COTS multi-core processors to rugged embedded avionics systems,” said Lynn Bamford, Senior Vice President and General Manager, Curtiss-Wright Defense Solutions division. “Their INTEGRITY-178 tuMP RTOS is an ideal complement to our industry-leading safety certifiable COTS single board computers. Designed for use in military and commercial airborne applications, this new class of SBCs frees system designers from the time-consuming tasks of creating all of their avionics system’s low level artifacts or building the modules themselves. Our COTS DO-254 artifact kit makes this SBC the industry’s highest performance multi-core solution to meet the rapidly increasing demands of system designers seeking safety certifiable COTS products.”

“Green Hills Software is extremely proud to be supporting Curtiss-Wright’s safety-certifiable COTS boards. Their impressive lineup of advanced multi-core SBCs, starting with their VPX3-1220, is a perfect match for our INTEGRITY-178 tuMP operating system,” said Dan O’Dowd, founder and chief executive officer of Green Hills Software. “INTEGRITY-178 tuMP allows VPX3-1220 users to utilize all available compute power from the eight virtual cores of the new Intel Skylake processor. INTEGRITY-178 tuMP’s built-in capabilities for the VPX3-1220 include GuestOS virtualization of multiple Linux and/or Windows applications combined with the simultaneous operation of safety- and security-critical applications in native INTEGRITY-178 64-bit mode, all based on deterministic, user-defined core and scheduling assignments.”

The VPX3-1220 is the industry’s first multi-core Intel Xeon-based SBC designed to meet DO-254 Design Assurance Level (DAL) C for use on safety critical military and civil aerospace platforms. This high-performance, safety certifiable COTS module is supported by a wide range of popular operating environments, including real-time operating systems certifiable to DO-178C. Because the VPX3-1220 is offered with off-the-shelf certifiable design artifacts available from Curtiss-Wright it speeds the system safety certification process. Available with certifiable DO-254 design artifacts from Curtiss-Wright, this powerful VPX module can greatly speed the deployment and certification of critical manned and unmanned airborne Safety Certifiable applications.

This SBC is ideal for use in SWaP-C constrained aerospace and defense systems. It’s designed for general purpose mission computing applications that require the highest possible processing performance while consuming low power. It speeds and simplifies the integration of Intel Xeon-class processing into demanding deployed applications such as mission computing, image and display processing, virtualization and small multi-SBC ISR systems.

About the Quad-Core Xeon E3 V5 Processor

Intel’s quad-core hyper-threading Xeon E3 V5 processor features an integrated Intel HD Graphics P530 graphics processor unit (GPU) that excels at graphics applications, and can drive 2D and 3D visual applications to multiple displays with up to 4K resolution. This helps to reduce overall system SWaP-C by eliminating the need to use a separate graphics module to support OpenGL® for graphics-intensive applications. The processor’s 24-core GPU can also

serve as a general purpose GPU (GPGPU), delivering performance up to 403 GFLOPS with OpenCL™ programming language support for demanding data processing applications. Built-in hardware codecs can also be used to accelerate H.254/H.265/HEVC video encoding and decoding applications.

Full System Solutions

The VPX3-1220 is easily integrated with other members of Curtiss-Wright's extensive 3U OpenVPX product family, including Intel, Power Architecture® and ARM-based SBCs, powerful graphics and storage modules, as well as DSP and FPGA engines to develop powerful mission computing and ISR/EW systems. It joins the recently introduced [Xeon Processor D-based CHAMP-XD1 3U VPX DSP processor card](#) to provide customers with a wider choice of Xeon-based computing modules, enabling system designers to select the solution that best matches their application's requirements without having to compromise on features and performance.

Ideal for Technology Upgrades

Designed to be pin-compatible with previous generations of Curtiss-Wright SBCs, the VPX3-1220 is ideal for use in technology upgrade programs. Thanks to its 6th generation 'Skylake' Xeon processor, the VPX3-1220 features faster DRAM and consumes lower power than previous generations of SBCs. The board's enhanced graphics and video features deliver up to 3x faster GPU performance compared to predecessors.

Curtiss-Wright Safety Certifiable Hardware

The VPX3-1220 was developed under Curtiss-Wright's COTS Safety Certifiable Module initiative using a process that results in a DO-254 DAL C certifiable product with supporting artifacts. The module's DO-254 Artifact Kit offers reusable design artifacts and support documents for use in safety critical military and civil aerospace platforms.

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

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 8,400 people worldwide. For more information, visit www.curtisswright.com.

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