

Sundance Newsletter

August 2025

**SUNDANCE**

Discover our Latest Ventures and Achievements from this Month

Designing OpenVPX for Scalable, Long-Life Defence Systems

OpenVPX gives developers the flexibility to create robust and upgradeable defence systems that can last for decades. From module selection to backplane topology, cooling methods and protocol choices, every design decision shapes performance, reliability and scalability. Early component selection is critical to avoid costly redesigns later, especially when aiming for SWaP-optimised and MIL-STD-compliant systems.

Sundance and Etion Create address these challenges with a portfolio of high-performance modules such as the VF365 and VF370, which combine FPGA, DSP and processor technologies for demanding applications including radar, SIGINT, SDR and autonomous platforms. By adhering to VITA and SOSA standards, these modules maintain interoperability and simplify long-term upgrades.

DESIGNING

OpenVPXTM

HIGH-PERFORMANCE ARCHITECTURE FOR FUTURE- PROOF DEFENSE APPLICATIONS



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Key Takeaways from the Blog

- Importance of early component choice in OpenVPX design
- How module, slot and backplane profiles work together
- Cooling methods for different operational environments
- Protocol options for varied application needs
- VF365 and VF370 as scalable, SWaP-optimised solutions

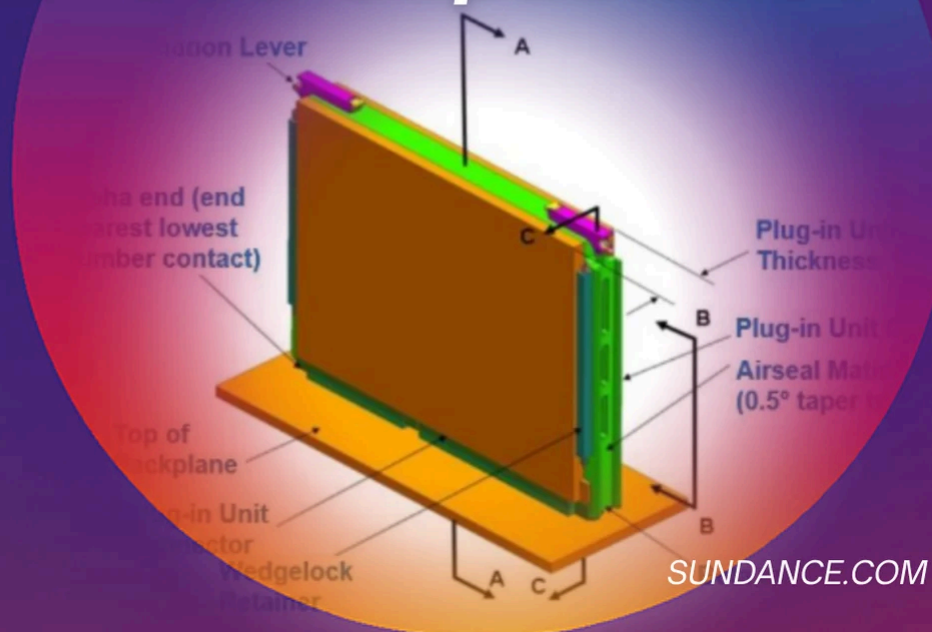
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Extending OpenVPX for Next-Generation Defence Capabilities

OpenVPX's modularity has long supported evolving defence needs, but its true strength lies in adaptability. New approaches like software-defined backplanes (VITA 67.3) and I/O as a service make it possible to reallocate bandwidth, integrate new protocols and support demanding workloads like AI inference and quantum-resistant encryption without hardware replacement.

Sundance and Etion Create leverage this flexibility with platforms like the VF365, Polar-VPX and VPX3-VERSA2, enabling AI acceleration, dynamic reconfiguration and low-latency data handling in compact, power-efficient packages. These capabilities keep systems ready for emerging mission demands while avoiding costly redesigns.

Extending OpenVPX Systems for Enhanced Capabilities



Key Takeaways from the Blog

- Why adaptability matters more than modularity alone
- Role of software-defined backplanes in dynamic bandwidth allocation
- Thermal and power advances for high-load computing
- Key technologies: CXL 3.0, TSN, VITA 49.2, partial FPGA reconfiguration
- Example platforms supporting AI, post-quantum security and edge processing

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