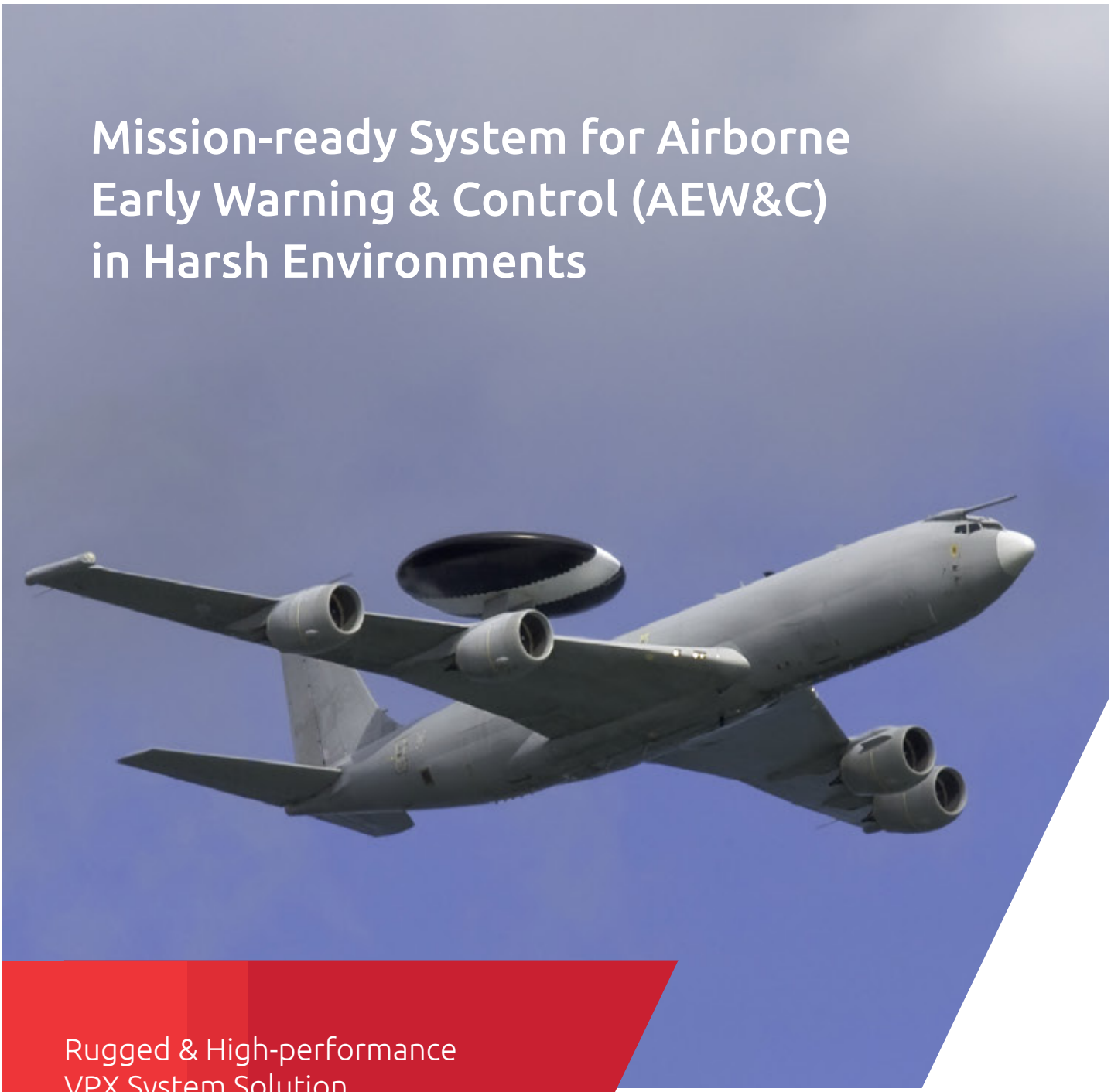
ADLINK
LEADING EDGE COMPUTING

Mission-ready System for Airborne Early Warning & Control (AEW&C) in Harsh Environments



Rugged & High-performance
VPX System Solution

Application Story

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Mission-Ready System for Airborne Early Warning & Control (AEW&C) in Harsh Environments

Background

An Airborne Early Warning & Control (AEW & C) radar system is able to overcome the limitations of ground-based radar caused by the curvature of the earth as well as minimizing topographical interference. In addition, AEW&C can also search directly for target objects in the air, on the ground, or on the sea and transmit and receive signals to and from satellites. Modern AEW&Cs are equipped with not only the primary functions of airborne early warning and dispatch but also additional functions including command, control, and battle management (C2BM) in coordination with ground-based radar systems, which greatly enhance overall operational efficiency in the field.

As the quality of imaging equipment improves, there is an increasing demand for image data and file transfer capability. The adoption of computing systems with higher efficiency is a key prerequisite to achieving faster data transfer with lower latency in order to meet the requirements of applications such as real-time navigation, communications, and data interpretation. Onboard systems must also have excellent vibration and shock resistance in order to withstand inflight turbulence. And while standard systems may have immense computing power, their high-power consumption requires substantial active cooling similar to that of data centers, making them unsuitable for meeting the extremely rigorous design specifications required for operation in rugged environments.

Customer Challenges

For Airborne Early Warning and Control (AEW&C) platforms, the onboard computing system must deliver high-performance, low-latency processing to support advanced detection, tracking, and real-time communication across satellite, ground, air, and naval networks. This enables rapid target identification, command execution, and data relay to command centers or intelligence units—often under combat conditions.

To meet mission demands, the system must provide:

- High-efficiency processing to handle large volumes of data in real time
- Built-in redundancy to ensure continuous operation
- Ruggedization to withstand high shock, vibration, and wide temperature swings
- Altitude resilience, remaining fully operational at altitudes up to 40,000 feet

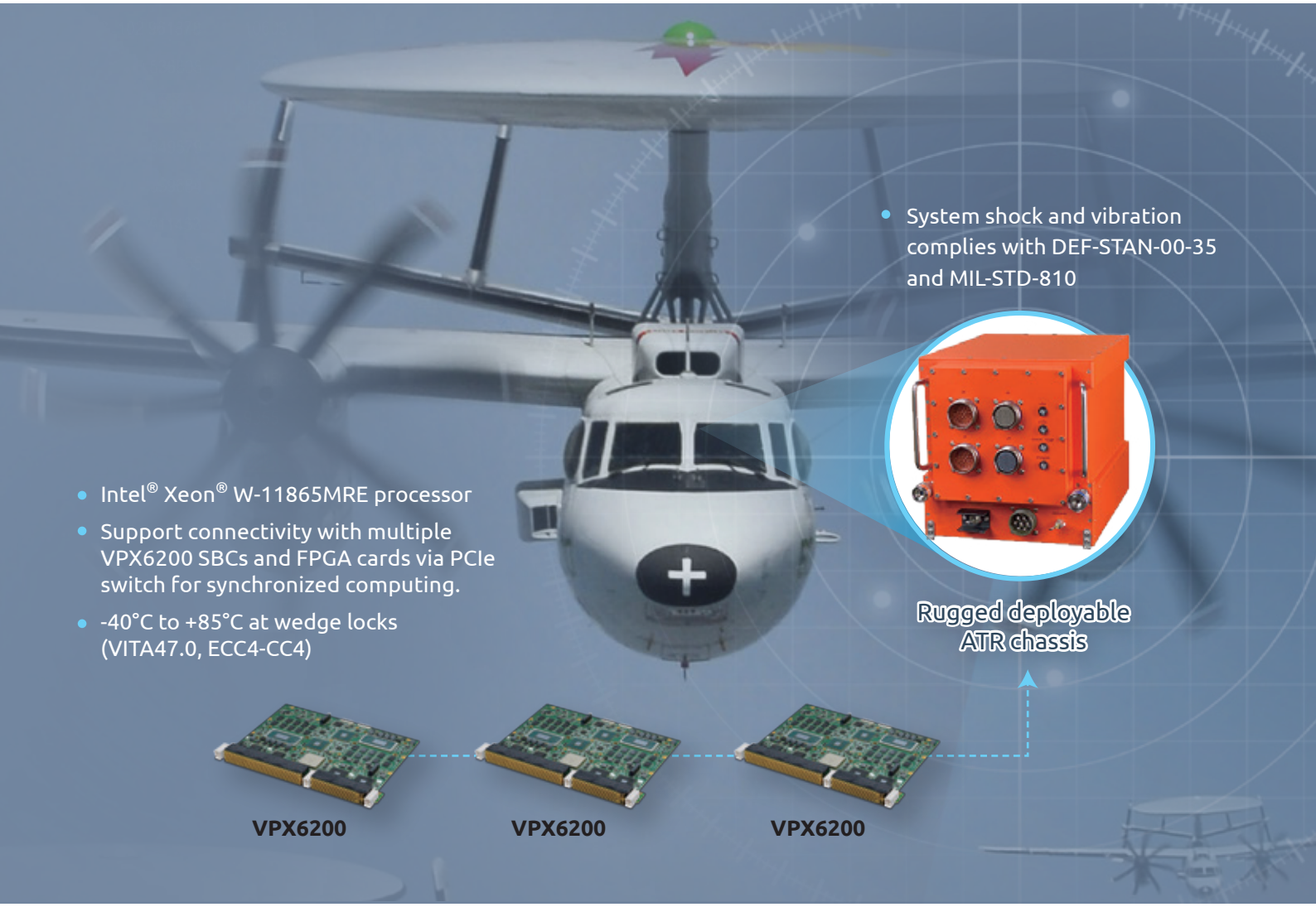
These requirements make compute density, fault tolerance, and environmental durability essential in any AEW&C server architecture.



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ADLINK Solution



Benefits

- **Unmatched Computing Capability:** Powered by the Intel® Xeon® W-11865MRE, the VPX6200 delivers real-time, high-throughput computing for demanding mission-critical applications.
- **Built-in Dual Node Redundancy:** Each VPX6200 integrates two CPU nodes within a single slot, enabling standby functionality to ensure system-level redundancy and enhance reliability in mission-critical applications.
- **Built for Harsh Environments:** An ideal solution for harsh environments with a high level of shock and vibration resistance, conduction cooling, -40°C to +85°C operating temperature range, and operational at altitudes up to 60,000 feet.
- **Accelerated Integration:** Streamline development with our expert ecosystem. We work with top-tier chassis and backplane partners to deliver system-level solutions optimized for your deployment.

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