ADLINK
Leading EDGE COMPUTING

Aeronautical Communications Use Case

Aeronautical communications for Airborne Early Warning & Control (AEW&C) in harsh environments

Extreme Outdoor Server SETO-1000



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The Problem

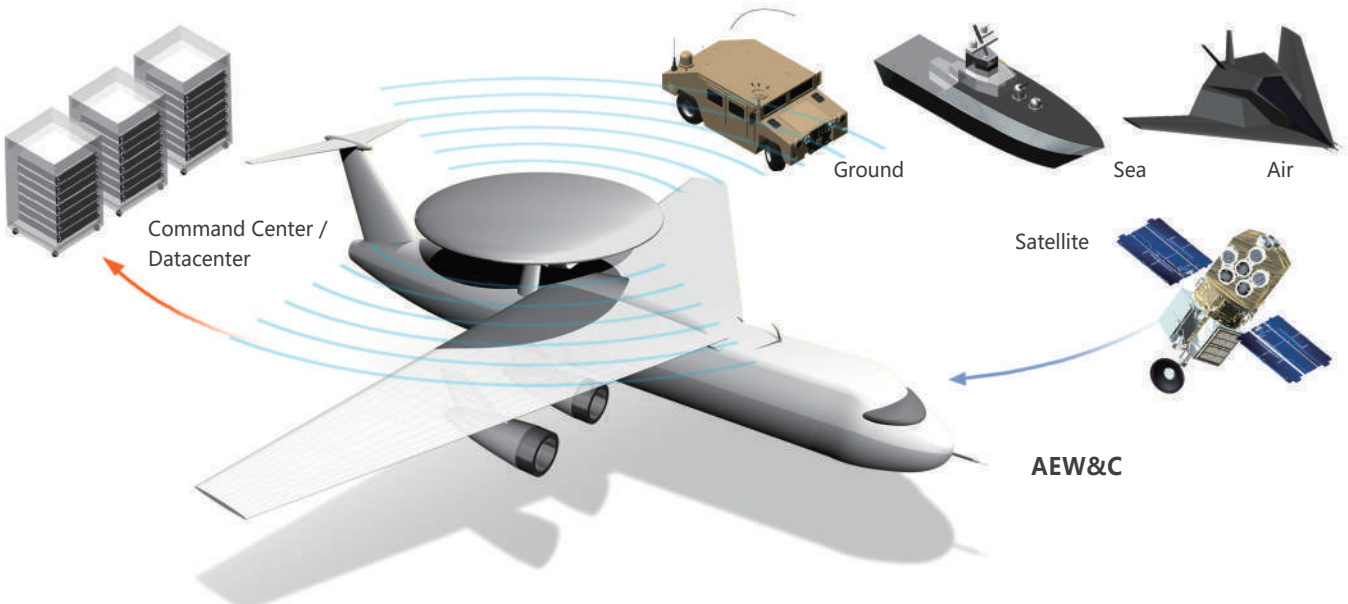
An Airborne Early Warning & Control (AEW&C) radar system is able to overcome the limitations of ground-based radar caused by the curvature of the earth as well as minimizing topographical interference. In addition, AEW&C can also search directly for target objects in the air, on the ground, or on the 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 telecommunication-grade 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 telecommunications-grade servers 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.

The Application

- ***Application: Aeronautical communications for Airborne Early Warning & Control (AEW&C) in harsh environments***
- ***Region: America***
- ***Industry: Military***

The servers for an AEW&C designed by clients must have powerful computing capabilities at low latencies in order to strengthen their detection and communication functions and to ensure smooth transfer of signals to and from satellites, the ground, the air, and the sea. This also enables armed forces in battle zones to determine target activity and to issue commands in a real-time manner as well as to rapidly transmit relevant data to the command post or intelligence center. Consequently, high-efficiency computing power and suitability for installation and use in harsh environments characterized by a high demand for vibration and impact resistance are the two key system design requirements for servers onboard an AEW&C.



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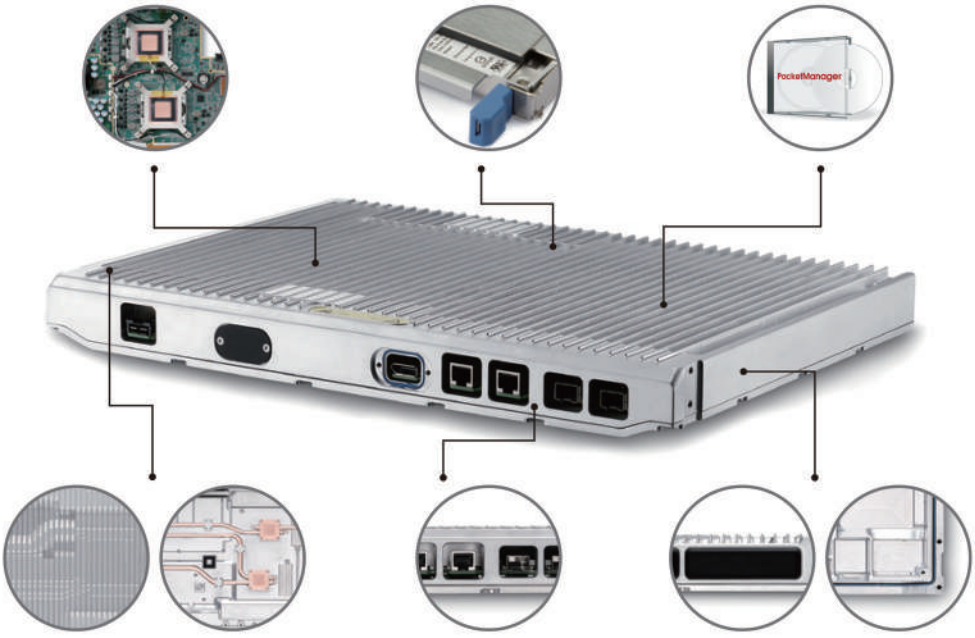
ADLINK Solution

Extreme Outdoor Server SETO-1000

Intel® Xeon® Processor E5-2400 v2 series
Intel® C604 Chipset

2x SATA hot-swappable drive bays for easy maintenance

Packet processing acceleration with ADLINK PacketManager



Conduction cooled, aluminum chassis
Operating Temperature
Range: -40°C to +55°C

Dual 10G SFP+ ports
Dual 10/100/1000 BASE-T ports

IP65 rating:
water and dust proof

Advantages and Benefits

- ***High Computing Capacity and Density:*** Data center server-grade performance powered by Intel® Xeon® E5 Processors with excellent 4K video data processing capability in a 1U platform.
- ***Unmatched Rugged Design:*** An ideal solution for extremely harsh outdoor environments with a high level of shock and vibration resistance, conduction cooling, -40°C to +55°C operating temperature range, and IP65 water and dust protection rating.
- ***Low Maintenance and High Reliability :*** SETO-1000 reduces maintenance costs by eliminating fans and filters and offering worry-free, weather-resistant, high-speed connections with copper and fiber options, effectively improving reliability and increasing uptime.
- ***Short Development Cycle and Fast Time-To-Market:*** ADLINK's application ready intelligent platform (ARiP) software (such as PacketManager), remote management functions, and system management APIs for application developers enable the customer to focus primarily on their application development.

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