ADLINK
Leading EDGE COMPUTING

Vehicular Communications Use Case

Vehicular Communications for Armored Vehicles in Demanding Environments

Extreme Outdoor Server SETO-1000



www.adlinktech.com

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The Problem

Armored vehicles have a high level of cross-country mobility which allows them to travel across desert wastes, snow, gravel and water while carrying out reconnaissance, transport, command, rescue, tank and infantry support missions. There are also special purpose armored vehicles for bridge laying, command and control, and mine-clearing.

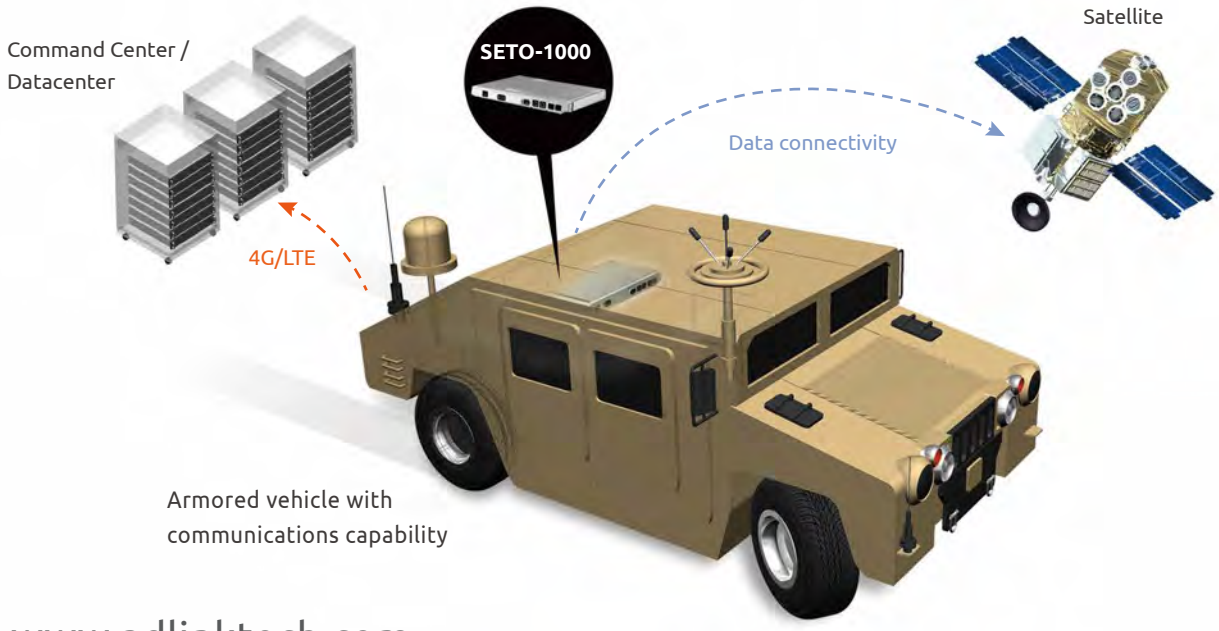
The missions of armored vehicles have become increasingly diverse over time. Many vehicles with command and communication capabilities must now transmit gathered intelligence in real-time back to the command center or receive satellite signals for processing radar imagery. Faster response times, lower latencies and greater computing power are thus needed from the on-board computing system. The system must also be able to operate while the armored vehicle travels through uneven terrain or difficult weather conditions.

A standard telecommunications-grade server may have an immense computing power, but its high-power consumption requires cooling capabilities normally only found in data centers, making it very difficult to satisfy the rigorous design specifications for rugged systems operating in extreme environments.

The Application

- ***Application: Vehicular Communications for Armored Vehicles in Demanding Environments***
- ***Region: Europe***
- ***Industry: Military***

The customer's armored vehicle design called for a fast and powerful vehicle-mounted server to enhance its reconnaissance and communication capabilities. The armored vehicle was expected to receive signals beamed down by the satellite while on the move, allowing units in the desert or combat zone to immediately track a target's movements, issue orders and transmit information back to headquarters or the intel center. The temperatures of the environments that armored vehicle operate in are not as stable as an those of an indoor data center, so the two key system design requirements for the armored vehicle's on-board server were: high computing efficiency and suitability for installation and ability to operate in demanding outdoor environments (-40°C ~ 55°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 ingress 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 ingress 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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