

KEEPING TROOPS CONNECTED

NCS designed and built an IP-Over-Satellite appliance for use in combat support vehicles in harsh environmental conditions.



A High-Mobility Multipurpose Wheeled Vehicle (HMMWV or Humvee)

Deploying a computerized device for operation in combat support vehicles is always a challenge. The equipment must be able to withstand harsh environmental conditions, and yet remain sufficiently cost-effective for the military to deploy in large quantities.

In this case, the U.S. Army and the U.S. Marine Corps were in need of a ruggedized IP-Over-Satellite appliance with specific requirements and the ability to fit into existing hardened protective cases already installed in various vehicles. Comtech EF Data, the satellite equipment supplier to both the U.S. Army and the U.S. Marines, tasked NCS to design and manufacture a x86 based appliance running Linux to aggressively compress and decompress network data for transmission over terrestrial satellite links. The appliance must deliver high CPU performance yet draw little power and withstand unpredictable combat environments.



CUSTOMERS

The United States Army
<http://www.army.mil/>

The United States Marine Corps
<http://www.marines.mil/>

PROJECT

The Hardened Portable IP-Over-Satellite Appliance

CHALLENGE

Soldiers and Marines operating combat support vehicles needed to stay connected with network resources in the rear. Existing IP-Over-Satellite technology makes this connection possible. However, a customized, mission specific appliance that allowed troops to easily setup the connection and performed dependably and securely in harsh conditions was required.

SOLUTION

NCS designed and built cost-effective, hardened half and full rack IP-Over-Satellite appliances with dimensions, security and power consumption characteristics that could be reliably and deployed in combat support vehicles.

BENEFITS

The U.S. Army and the U.S. Marines now have a cost-effective solution for troops to stay connected while engaged in combat support. The appliance is easy to use—simply turn it on and it will do its job. The NCS Hardened Portable IP-Over-Satellite Appliance is reliable no matter what environment the vehicles operate in and it is secure—leaving no chance for sensitive or classified data to fall into the wrong hands.



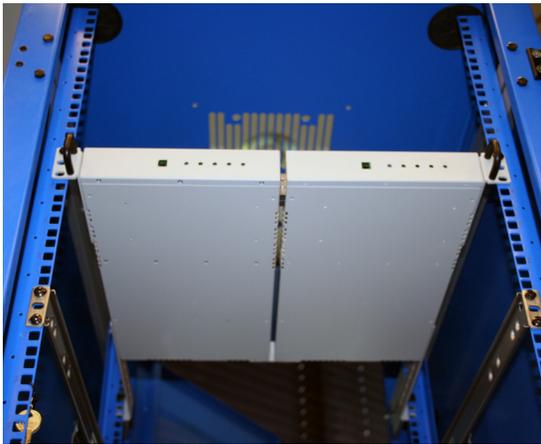
Sharply Focused. Quality Driven.



TWO CONNECTED HALF RACK APPLIANCES



FULL RACK APPLIANCE



TWO CONNECTED HALF RACK APPLIANCES MOUNTED



RUGGEDIZED CASE

HARDWARE

- Full Rack IP-Over-Satellite Appliance
- Half Rack IP-Over-Satellite Appliance

SERVICES

Each system comes with a three-year warranty.

PARTNER

Comtech EF Data
<http://www.comtechefdata.com/>

MISSION SPECIFIC ENGINEERING

Powered by an Intel® Core™ 2 Duo Mobile CPU, the appliance is built to deliver high performance while drawing very little power. Configurable in a sub-1U full- or half-width rack housing, the IP-Over-Satellite appliance included an embedded LAN bypass and enclosed encryption “dongle”. NCS also integrated a feature on the system board that erased all data in the flash storage as soon as power is cut off, eliminating any chance for sensitive or classified data to fall into the wrong hands.

NCS also designed the appliance to withstand a number of environmental factors including high-temperature, shock, vibration, dust, humidity and water. Its self-contained cooling sub-system doesn’t allow for particulates to enter from the front. Additionally, only high industrial graded Integrated

Circuit (IC) components were used on the system board to lengthen its service life.

“We understood that the customer needed a high reliability platform adapted to fit their specific needs. By maximizing the use of Commercial-Off-The-Shelf (COTS) products and customizing to meet the rigorous environmental and performance profile, NCS saved the customer thousands of dollars of non-recurring engineering (NRE) and prototype testing costs. It also allowed NCS to field a complete solution ahead of schedule,” states Tim Shanahan, Engineering Manager of OEM Servers and Appliances at NCS.

PARTNERSHIP FOR EXCELLENCE

Branded under Comtech EF Data’s line of products as the *TurboIP-G2 Performance Enhancement Proxy (PEP)*, NCS and

Comtech EF Data have delivered over 1,500 units to the U.S. Army and Marine Corps since late 2008. The deployment continues at a pace of 100 units per month.

“NCS has continued to address our ever changing needs, meeting our tough requirements and schedules. They have continuously gone out of their way to ensure our product is a solid performer. It has been a pleasure to work with NCS, and we look forward to continued success with NCS,” comments Randy Montgomery, Director and Product Manager of Network Products for Comtech EF Data.

NCS is currently in the process of making additional modifications to further boost performance and incorporate new security features.

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