VICOR

Case study: Military ground vehicles

Implementing a common power supply across several types of vehicles

Customer's challenge

Powering military vehicle functionality faces critical challenges in balancing, transporting, and generating energy for advanced, power-hungry systems in harsh environments. Key issues include immense power demands for new sensors and weapons, the high logistical burden of fuel supply, reliance on heavy, low-density batteries, and maintaining, operating, and charging in remote areas. The key goals were:

- A solution that would work across thousands of vehicles
- Need for cold start and an option for NED (nuclear event detect circuit) compliance
- A solution capable of producing demo units very quickly

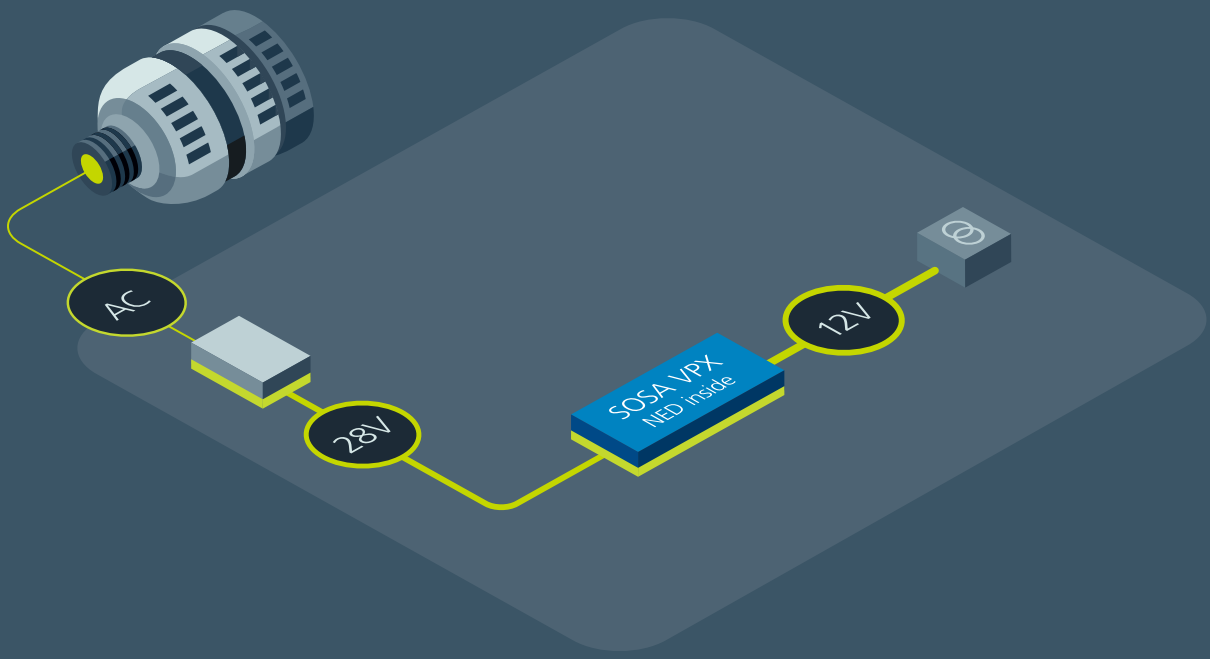
The Vicor solution

Vicor SOSA aligned power supplies are based on Vicor high performance Vicor DC-DC converter technology. The high power and current delivery, strong thermal performance, and reliability of Vicor VPX products ensure longer mission times and superior system endurance to support crucial missions. Key benefits were:

- Bluewire unit for NED, with small power de-rating
- Highly rugged, conduction-cooled SOSA aligned power supply
- Quick prototyping and time-to-market

The power delivery network

The Vicor SOSA-compliant 3U power supply is based on Vicor DCM™ DC-DC converter technology, which provides superior density in a low-profile package. This solution can provide up to 800W within the 3U package and employs high efficiency, two-sided conduction-cooled modules. Up to four power supplies can be paralleled to increase output power capability with proprietary wireless current sharing.



SOSA™ aligned power supply

VPX systems

Input: 10 – 45V, 18 – 45V

Output: 12V main, 3.3V auxillary

Power: Up to 800W

As small as
3.9 x 6.6 x 0.95in

vicorpower.com/sosa

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