



Efficiently powering the growing suite of advanced on-board sensors



Customer's challenge

As missile defense weapons become more sophisticated, they require higher performance power delivery to successfully incorporate advanced on-board technology to ensure more accurate and successful performance. Key goals were:

- 28V MIL-STD-704F input conversion to $-28V$
- Delivery high power in difficult circumstances
- Provide the necessary performance to enhance mission success



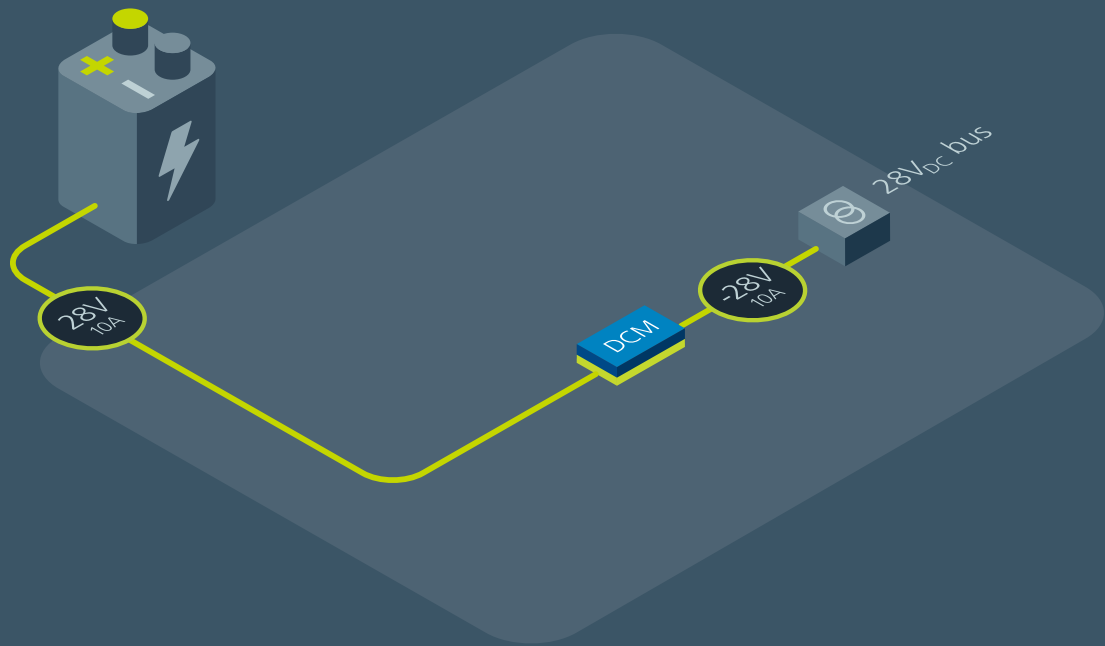
The Vicor solution

Vicor high-performance power modules provided the thermal, mechanical, and density benefits necessary to power the advanced onboard functionality. Powering an isolated, regulated $-28V$ bus, the Vicor DCM3623 provides the DC-DC conversion with a wide input range of 16V to 50V, and peak efficiency of 93.6% with superior power density. Key benefits were:

- Previously unattainable system size and weight
- High performance in harsh environments
- Wide input range

The Power Delivery Network

A 28V MIL-STD-704F input to -28V at 300W is converted using a DCM™ isolated, regulated DC converter. The thermal, mechanical and density benefits of Vicor ChiP packaging allow for cost-effective power solutions with previously unattainable system size and weight. Coupled with the high efficiency gained through zero voltage switching (ZVS) topology, these modules provide superior power system performance in a wide variety of environments. In this application, the Vicor DCM3623 provides DC-DC conversion with a wide input range of 16V to 50V, peak efficiency of 93.6% and power density of 818W/in³.



MIL-COTS DCM DC-DC converters

Input: 28, 30, 270V

Output: 3.3, 5, 12, 15, 24,
28, 48V

Power: Up to 1300W

Efficiency: Up to 96%

As small as 0.98 x 0.90 x
0.28in

vicorpower.com/mil-cots-dcm

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