



# Thermal Imaging - Airborne Maximizing Resolution and Range



High Efficiency



Small Size, Low Profile



Low EMI

## The Customer's Challenge

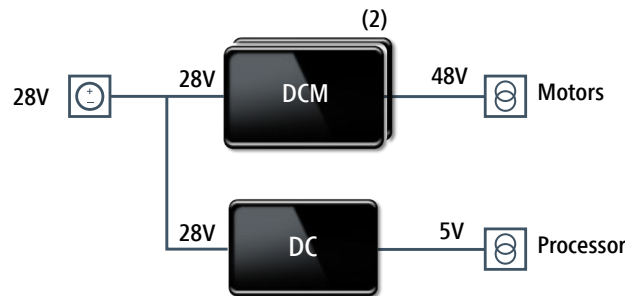
To be competitive manufacturers of thermal imaging systems are always on the lookout for ways of incorporating new levels of functionality into their advanced thermography systems, improving resolution and range as well as sensitivity and accuracy.

A market leader was upgrading one of their products designed for airborne applications, implementing new LEDs and sensors for improved optical resolution and range, and new motors for improved operator control and accuracy, all without increasing the complete system's weight or size. The design team was looking for a creative power solution that could support the increased power requirements and complexity, and offset the increased size and weight of the system improvements.



## The Solution

Two rugged MIL-COTS DCM DC-DC converters in an array provided a high power 48V rail for the positioning motors, allowing reliable operation in the harsh environments faced by helicopter-borne systems. An Isolated DC-DC converter module PI31xx provided a low noise 5V supply for the video processing system.



[Link to Whiteboard »](#)

## The Results

The size and weight of the power solution was significantly reduced by the use of power-dense, low-profile (DCM: 7.26 mm; PI31xx: 6.7 mm) light-weight modules. In addition, a move to a 48V output bus to power the motors reduced the cable weight. High efficiency at light loading reduced heat.

### Product Family Key Specifications

#### DCM™ DC-DC Converter Module

<b>Input Voltages</b>	9 – 50V <sub>DC</sub> , 16 – 50V <sub>DC</sub> , 18 – 36V <sub>DC</sub> , 36 – 75V <sub>DC</sub> , 120 – 420V <sub>DC</sub> , 160 – 420V <sub>DC</sub> , 200 – 420V <sub>DC</sub>
<b>Output Voltages</b>	5V, 12V, 13.8V, 15V, 24V, 28V, 36V, 48V
<b>Output Power</b>	4623 ChiP: Up to 600W 3623 ChiP: Up to 320W 3714 VIA: Up to 600W 3414 VIA: Up to 320W
<b>Efficiency</b>	Up to 93%
<b>Dimensions</b>	4623 ChiP: 47.91 x 22.8 x 7.26 mm 3623 ChiP: 38.72 x 22.8 x 7.26 mm 3714 VIA: 95.3 x 35.6 x 9.4 mm 3414 VIA: 85.9 x 35.6 x 9.4 mm

#### PI31xx Isolated DC-DC Converter Modules

<b>Input Voltages</b>	48V (36 – 75V) Comms 28V (16 – 50V) M-Grade 24V (18 – 36V) Industrial
<b>Output Voltages</b>	3.3V, 5V, 12V, 15V, 18V
<b>Output Power</b>	50W / 60W (dependent on model)
<b>Efficiency</b>	Up to 87%
<b>Dimensions</b>	22 x 16.5 x 6.7 mm