Low Noise | Low EMI | Small Size; Low Profile | High Efficiency

Flight Simulator

Simple Upgrade Capability

The Customer's Challenge



Demand for flight simulators is buoyant, however the very thing that is driving the growth – how well they simulate flight conditions – is what is driving the systems' high complexity and so cost. This means the systems must have long working lives, with both maintenance and upgrades being complicated and expensive.

One manufacturer was developing a system that provided the best functionality and features on the market on the date of launch. But seeking to differentiate their products still further, they were looking at how to make sure their design could be easily and cheaply updated as new functionality was introduced throughout the long life of the simulator.

Accommodating new functions and features required flexibility in the power solution to facilitate different outputs to meet future demands, while fitting into a low rack card-width.

Any downtime can be extremely costly so high system reliability was key, even in challenging environmental conditions. In addition, both acoustic noise and electrical noise needed to be minimized for optimal video display performance.

The Solution

A PI31xx Isolated DC-DC Converter module provides the regulated 3.3V 10A rail, with the isolation reducing the electrical noise in the downstream systems.

Link to Whiteboard »



The Results

The PI31xx regulator's very small size and low profile (22 x 16.5 x 6.7 mm) enabled it to be fitted easily onto the board in the rack. Multiple functionality upgrade paths could be supported with the same power design because of the range of output options in the same product family, as well as the wide trim range provided.

The reliable, rugged and highly efficient MIL-COTS solution removed the need for noisy and bulky fans and enabled operation down to -55°C.

Product Family Key Specifications

PI31xx Isolated DC-DC Converter Modules

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

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