

Network Security Redundant AC-DC Supply

Secure Power



Small Size,
Low Profile



Redundancy/
Power Sharing

The Customer's Challenge

As the internet continues to evolve, computer networks become bigger and bigger, and our reliance on networks grows, so too does the number of security threats to these networks increase (with the resultant impact on business). This makes effective and reliable network security one of the most important factors for companies to consider.

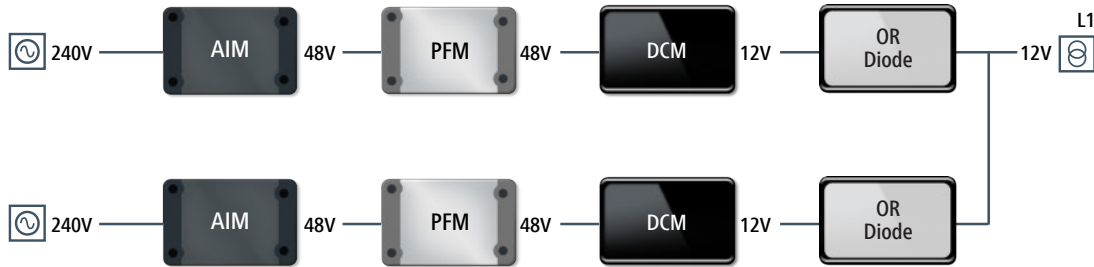
As one customer explained when searching for a power solution for an AC-DC supply, security is dependent on maintaining the uptime of instruments, and thus system reliability is critical. Achieving this uptime required a redundant power system with hot swap capability. Our customer's challenge was that they had restricted rack space for their equipment that provided real time monitoring of optical networks.



The Solution

A complete N+1 power solution was developed, each of the two units using an ultra-low profile (9.4mm high) PFM isolated AC-DC converter module to provide a 48V rail from the universal AC inputs. To improve reliability further power sharing was required between the two front-ends. This was achieved using a DCM DC-DC converter module following the AC-DC stage. The DCMs also allowed conversion to 12V. To minimize single-point failures active OR'ing diodes were used to combine the outputs of the two supplies.

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The Results

The ultra-low profile of all the components enabled the full system to be placed in a 1U rack space. Power sharing between power units improved long-term reliability as the supplies operated at a reduced load and temperature, whilst still providing redundancy. Power sharing between supplies was maintained even if the power supplies operated from different AC-DC sources. Vicor provided a solution based on proven, compatible components, from the power source to the point of load.

Product Family Key Specifications

PFM™ Isolated AC-DC Converters with PFC

Input Voltages	Universal rectified: 85 – 264V _{RMS}
Output Voltages	24V and 48V isolated and regulated outputs
Output Power	400W
Efficiency	Up to 92%
Dimensions	PFM 4414: 111 x 36 x 9.4mm PFM 4914: 125 x 36 x 9.4mm

DCM™ DC-DC Converter Module

Input Voltages	9 – 50V _{DC} , 16 – 50V _{DC} , 18 – 36V _{DC} , 36 – 75V _{DC} , 120 – 420V _{DC} , 160 – 420V _{DC} , 200 – 420V _{DC}
Output Voltages	5V, 12V, 13.8V, 15V, 24V, 28V, 36V, 48V
Output Power	4623 ChiP: Up to 600W 3623 ChiP: Up to 320W
Efficiency	Up to 93%
Dimensions	4623 ChiP: 47.91 x 22.8 x 7.26mm 3623 ChiP: 38.72 x 22.8 x 7.26mm