



Remote Radio Unit – AC-DC



Technical Support



Small Size, Low Profile



Fast Prototyping



PCDM

Keeping One Step Ahead in a Fast Changing Market

The Customer's Challenge

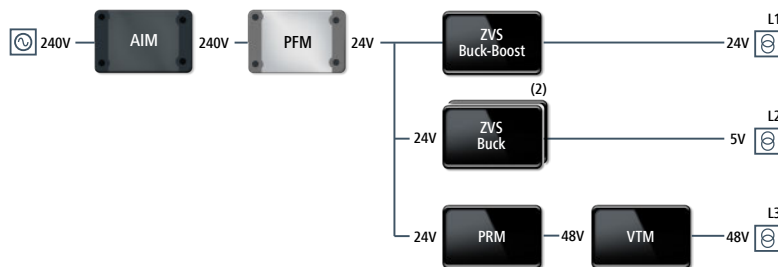
As the volume of mobile data communications continues to grow exponentially, fueled by smart phones and video content usage, radio network service providers need to provide the increased bandwidth to support it. A common trend is to reduce base station cell sizes to better distribute the traffic. The increased number of sites required means that locations previously thought to be less than ideal are being used. Difficult-to-access sites, or those in exposed positions subject to lightning and other transient power surges, provide some tough environmental conditions and design challenges. Power supplies need to reduce in size, and efficiency improvements are needed to ease the thermal management, all while operating under fault conditions and complying with stringent EMI standards.



The Solution

Using the PFM isolated AC-DC converter and ZVS regulators to provide the low voltage 24V and 5V rails and a PRM regulator and VTM current multiplier to provide the higher power 48V rail the customer was able to shrink the size of the system by combining the power supply into the system board.

[Link to Whiteboard »](#)



The Results

This solution provided a space saving of over 60% compared to the previous power supply design and it utilized conduction cooling of the system to further improve system reliability. Support in meeting global standards was provided by local Vicor applications engineers and the solution was prototyped very quickly using Vicor's standard evaluation boards.

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

Cool-Power® ZVS Buck Regulator Module

Input Voltages	12V, 24V, 48V (Nominal)
Output Voltage	Wide output range (1 – 16V)
Output Current	8A, 9A, 10A, and 15A versions
Efficiency	Up to 96.5% Light load and full load High efficiency performance
Dimensions	LGA SiP: 10 x 14 x 2.56mm LGA SiP: 10 x 10 x 2.56mm

Cool-Power® ZVS Buck-Boost Regulator Module

Input Voltages	16 – 34V, 21 – 60V
Output Voltage	12 – 34V, 21 – 36V, 36 – 54V
Output Power	Up to 240W continuous
Efficiency	Over 98% efficiency at >800 kHz FSW
Dimensions	LGA SiP: 10 x 14 x 2.5mm

PFM™ Regulator Module

Input Voltages	48V, (36 – 75V)
Output Voltage	48V
Output Power	Up to 600W
Efficiency	Up to 97%
Dimensions	32.5 x 22.0 x 6.73mm

VTM™ Current Multiplier

Input Voltages	0 – 60V
Output Voltage	0 – 55V
Output Power	Up to 135A
Efficiency	Up to 96%
Dimensions	32.5 x 22.0 x 6.73mm