Cooling Filters

Telecommunications

W-CDMA Node B Base Station

Optimization Potential

A Global Wireless Market leading OEM wanted to increase reliability of its W-CDMA Node B Macrocellular product platform of outdoor enclosures while reducing the total cost of their product to their customers. The Modular Cell product platform had four different outdoor enclosure product versions that used a Direct Air Cooling (DAC) system.

Solution

Gore worked with the customers system engineers to develop a multi-use DAC system using the GORE® Cooling Filters with expanded PTFE membrane. They designed one common Cooling Filter to be used on all four outdoor enclosures.

Result

The base station system reliability increased due to a lower system operating temperature and the elimination of thermal hot spots in the outdoor enclosure. GORE® Cooling Filters also benefitted the customer by allowing faster global deployment times and a reduction in part numbers. They also allowed supply chain lead times for the thermal enclosure system to be reduced by 60%. Additionally, using one common filter in the product platform reduced global requirements for spare filters. The common filter design allowed them to scale up the system from a minimum sector configuration to a maximum sector configuration. Since the GORE® Cooling Filter solution requires less battery backup power than other thermal solutions it reduced the amount of energy required.

Application: W-CDMA Node B Base station

Capacity: Up to 3 Sectors x 4 Carriers, or 6 Sectors x 2 Carriers in one cabinet

Deployment: Global

Heat dissipation: 1000 to 4000 Watts

Expected filter life time: 5 years

Filter material: GORE expanded PTFE

Filter efficiency: 99.0% @ 0.3 µm

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