



# Cooling Filters

Telecommunications

## Case History

# GSM Wireless Base Station

### OPTIMIZATION POTENTIAL

Major OEM needed to lower capital expenses in order to stay competitive in wireless infrastructure market. Current systems were evaluated for areas of possible improvement. This included reviewing component sizes, costs, and service ranges. In addition, reliability issues were surfacing in equipment deployed in extremely hot environments.

### SOLUTION

Compact GORE® Cooling Filters with expanded PTFE membranes were installed to replace multiple venting components and also allow for more cost-effective direct air cooling.

### RESULT

By optimizing component cooling using GORE® Cooling Filters, meantime between failure (MTBF) was improved by over 30% compared to the previously used heat exchangers. In addition, because of the efficiency of direct air cooling, the deployment range of the system could be increased for hotter regions up to 55°C. These benefits, along with the smaller size and the lower initial costs of GORE® Cooling Filters, resulted in a significant decrease in both capital and operating expenses. With more than 100,000 filters deployed, many with over 5 years of service, there have been no replacements required, even in high salt environments. Energy consumption has been reported at \$100/bts per month less than air conditioning units.



- Application:** GSM System
- Capacity:** Supports up to 8 carrier units
- Deployment:** Global
- Heat dissipation:** Up to 2.5 Kilowatts
- Airflow:** AVG. 250 m<sup>3</sup>/h MAX. 450 m<sup>3</sup>/h
- Expected filter life time:** 5-10 years
- Filter material:** GORE expanded PTFE
- Filter efficiency:** 99.0% (@ 0.3 μm, 1cm/s)

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