



COMMUNICATION TECHNOLOGY

APPLICATION EXAMPLE

## System platform for a high-availability telecommunications application

Implementing network expansions in remote areas of vast countries requires powerful infrastructures. HEITEC has developed a high-end system platform for the market leader in lasers for fiber-optic cable and telecom solutions. The platform represents a hub that receives and distributes various signals from a DWDM (dense wavelength division multiplex) network. Up to 96 signals with different wavelengths are transmitted via optical fiber pairs. With the appropriate optical amplifiers, transmission ranges of up to 1000 km are reached with transmission rates of up to 10 Gbit/s per channel. The requirements for transmission performance per slot, reliability, high availability, and easy maintenance are correspondingly high.

For the architecture, the customer chose the AdvancedTCA<sup>®</sup> (Advanced Telecommunications Computing Architecture) standard. This standard is widespread, fully established in the field of telecommunications and – thanks to standardization – provides access to various technologies as well as long-term, future-proof product availability. The backplane was developed in exact accordance with the customer's specifications and forms the basis for the hub. Up to 12 interface cards as well as two control units and two power entry modules can be used.

The fully equipped system has a total power consumption of approximately 2350 watts, which results in high heat generation in the comparatively compact system. Based on findings from a thermal simulation conducted during the design phase, HEITEC designed three hot swap-capable fan drawers. Each drawer contains a fan controller specially developed for the application that regulates the two integrated radial fans on the basis of temperature and can report a fan failure to the host. The modules provide cooling for 4 slots and are designed for quick replacement if needed. A SEEPROM (Serial Electrically Erasable Programmable Read-Only Memory) card for storing important data was specially developed for the customer, as well as the power entry modules (PEMs).

The power supply modules are redundant and, like all other parts of the platform, accessible from the front and easily replaceable. HEITEC's robust housing technology is the ideal basis for this.

## Innovative System Platform



Detailed view of one of the three innovative and hot-swappable fan trays



Detailed view of the two redundant PEM with integrated signal lights

## Technical Summary

- › Customer specific fan controller
- › Customer specific solution based on ATCA ®
- › 3 fan drawers with 2 radial fans each (hot-swappable)
- › 2 PEMs (power entry modules)
- › D x W x H: 332 mm x 19" x 10U

## Customer Benefits

- › Individualized design and specification as per customer request
- › High availability
- › Signal integrity analysis of backplane
- › Redundant power entry modules
- › High-end system platform
- › Long-term availability and product stability

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