



Electronic Cooling/Packaging Seminar Series



Mark Hendrix
Manager
CommScope

Mark Hendrix is originally from Virginia and received a B.S.M.E from Clemson University, and an M.S.M.E. from Southern Methodist University.

He has spent 25 years in the field of electronic packaging, working in both defense electronics and telecommunications. He has experience in the full breadth of product development with specialization in electronic packaging and thermal design solutions. His thermal design experience includes device and system level simulation and testing on a wide range of defense and communication products.

Mark's primary work experience includes: Airborne phase array radar thermal design for Texas Instruments Defense Systems Fiber to the Premise equipment design at Fujitsu Network Communications Long haul optical system development for Xtera Communications Wireless and fiber optic access equipment research and development at Commscope.

Practical Applications of Mechanical Engineering and Thermal Design in Access Telecommunications Networks

Access networks provide the last mile of connectivity to telecommunications customers throughout the world. Voice, data, and video services through fiber, copper, and wireless media are all delivered to the end user by the access portion of the network. In an access network, thermal management of active electronics and optical devices is critical to network reliability and performance.

In the access portion of networks, outside plant telecom enclosures provide environmental protection for both active electronics and optical devices. These enclosures must incorporate cooling systems that support thermal requirements of the electronic and optical components. In addition, with ever-increasing sensitivity to environmental impacts, the enclosures and cooling systems must have minimal aesthetic and acoustic impact to their surroundings.

Other factors that must be considered in outside plant enclosure thermal design are:

- Acoustic noise from active thermal components such as cooling fans
 - Size and form factor and its impact on product density
 - Diurnal cycles and transient thermal effects
 - Solar heat loading affects on equipment temperatures
 - Cost of cooling system components
 - Aesthetic impact on overall enclosure
 - Heat exchanger and intake filter fouling
 - Redundancy such that the cooling system will operate after a cooling component failure

Date: March 24th

Rm: 3-370 at 2pm

Hosted by: ME MLK Visiting Prof. Agonafer

MIT Department of Mechanical Engineering