

Abstracts

High End Microwave Technologies in Global Communications

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Microwave technology has played a prominent role in telecommunications. For many years microwave radio links and microwave waveguides and coaxial cable have transported telephone and television communications across the country and under the oceans. In 1965 commercial satellite communications joined these media. The stringent requirements for cutting-edge performance and extreme reliability placed on the microwave equipment used in commercial geostationary satellite communications has led to the continued use of "high end technologies." In military satellite communications these factors also dominate; however, cost effectiveness of the service provided to customers in the marketplace is an additional important factor for commercial applications, especially with the future introduction of a larger number of low orbit satellites. For instance, the Milstar satellites are perhaps an order of magnitude more costly than commercial ones and their throughput is orders of magnitude lower, but their design is driven by the extreme requirements on performance and survivability. On the other hand, when comparing commercial satellite hardware to microwave equipment in the consumer market, such as a microwave oven, the compromise in the consumer market between performance and cost has shifted even further toward the lowest possible cost.

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