Abstracts

A Comparison of Lightwave, Microwave, and Coaxial Transmission Technologies

J.R. Jones. "A Comparison of Lightwave, Microwave, and Coaxial Transmission Technologies." 1982 Transactions on Microwave Theory and Techniques 30.10 (Oct. 1982 [T-MTT] (Special Issue on Optical Guided Wave Technology)): 1512-1524.

The relative performance, complexity, and cost for three digital transmission technologies- microwave, coaxial, and lightwave- are compared from the point of view of the lightwave technologist. It is found that lightwave systems are inherently noisier than the others. However, its bandwidth advantage can be exploited through bandwidth expansion techniques to overcome the noise disadvantage. It is further found that lightwave systems are potentially less complex than their radio and wireline counterparts given the advancements expected in the near future. Lastly, it is found that present-day lightwave systems can be less costly than the other technologies. Furthermore, it is found that anticipated near-term improvements to the technology will make lightwave systems even more attractive from the cost point of view. It is concluded that digital lightwave and microwave systems will continue to grow in usage-each has its own unique advantages relative to the other-and that digital coaxial systems will decline in usage.

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