Abstracts

Millimeter-Wave Fiber Optics Systems for Personal Radio Communication

H. Ogawa, D. Polifko and S. Banba. "Millimeter-Wave Fiber Optics Systems for Personal Radio Communication." 1992 Transactions on Microwave Theory and Techniques 40.12 (Dec. 1992 [T-MTT] (1992 Symposium Issue)): 2285-2293.

System concepts for millimeter-wave personal communication systems and the advantages of millimeter-wave band usage are briefly described. Demonstration of broad-band millimeter-wave subcarrier transmission concepts over fiber optic links is performed. Several fiber optic link architectures, including one using a combination of direct laser modulation and indirect (external) optical modulation, are outlined with respect to signal transmission at millimeter-wave frequencies. Several configurations are experimentally investigated using 70 MHz, 300 MHz and 26 GHz subcarriers which transmit either FM or QPSK data signals. Additionally, the use of optical MMIC technology, which can result in the design of compact and cost-effective optical receivers, is described with respect to personal communication radio base station equipment. MMIC HEMTs operating as photodetectors are newly characterized in terms of digital and analog signal reception with excellent performance being observed.

❑ Return to main document.