Abstracts

Multi-Gigabit Fiber-Optic Video Distribution Network Using BPSK Microwave Subcarriers

D.D. Tang. "Multi-Gigabit Fiber-Optic Video Distribution Network Using BPSK Microwave Subcarriers." 1989 MTT-S International Microwave Symposium Digest 89.2 (1989 Vol. II [MWSYM]): 697-700.

This paper describes the design and performance of a field deployable fiber optic video distribution system using bi-phase-shift-keyed (BPSK) microwave subcarrier multiplexing (SCM) techniques to provide each subscriber with twenty 107 Mb/s digitized video signals and one 2.04 Mb/s voice/data signal, giving a total transport capacity of 2.144 Gb/s. The microwave subcarrier frequency covers the range from 1.9 GHz to 5.9 GHz. The 21 microwave subcarriers are multiplexed together to intensity modulate a high speed 1.3 µm single-mode laser dedicated to each subscriber. Each subscriber station is equipped with a high frequency PIN diode detector followed by microwave receivers. A bit-error rate of 10/sup -9/ is achieved at a laser modulation depth of 5% and a received optical power of -12 dBm.

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