Abstracts

A Passive Method for Monitoring Non-Ionizing Radiation

G.E. Fanslow and D.T. Stephenson. "A Passive Method for Monitoring Non-Ionizing Radiation." 1977 MTT-S International Microwave Symposium Digest 77.1 (1977 [MWSYM]): 178-180.

The temperature-dependent light scattering properties of cholesteric liquid crystals are used as both the sensing and indicating mechanism in a calorimetric radiation monitor. The liquid crystals are arranged on two dielectric disks; one is a plain dielectric and the other is metal coated. While both disks will respond to general changes in ambient conditions, the metallized disk will also have a temperature change due to absorbed radiation. Thus, the difference between the temperatures of the two disks, as indicated by the liquid crystals, is a measure of radiation. Experimental models are described and the results of tests at 2.45 GHz for power densities of from 1 to 15 mW/cm^2 are presented.

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