Abstracts

YIG-Filter Recovery After Exposure to High Power and X-Band Frequency-Stepped YIG Filter

E. Schloemann and R.E. Blight. "YIG-Filter Recovery After Exposure to High Power and X-Band Frequency-Stepped YIG Filter." 1983 MTT-S International Microwave Symposium Digest 83.1 (1983 [MWSYM]): 329-331.

The physical processes that determine the recovery of YIG filters after exposure to high-power signals are investigated. Results include predictions concerning nonthermal detuning due to spin-wave instability and concerning delayed emission after termination of the incident pulse. A novel YIG filter is described in which resonators can be detuned some 300 MHz in a 50 nanosecond time interval. When detuning is synchronized with a transmitter pulse the component can perform as a T.R. switch in addition to its normal selective function. A substantial amount of the incident rf power is reflected, providing a measure of protection for the filter and following receiver components.

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