TECHNOLOGY

Dual Mode Dielectric Resonator Filters without Iris

OVERVIEW

Microwave narrow band-pass filters are used in a large variety of applications ranging from consumer electronics such as direct broadcast receivers and cellular telephones, to phased-array radar systems and satellite transponders. Currently, dual mode microwave filters require that physically adjacent dielectric resonators be coupled to each other through an iris. This iris must be produced to a high degree of precision and is a major cost factor for these types of filters.

Researchers at the University of Maryland, Department of Electrical Engineering, have invented new dual mode dielectric resonator filters without an iris. These high quality filters can be inexpensively manufactured without compromising electrical performance. The inventors have succeeded in producing this microwave band-pass filter by inserting high dielectric constant ceramic cylindrical discs inside a metallic tubular enclosure. Tuning and coupling of the resonators are provided by screw-type mechanisms inserted through the wall of the tubular enclosure.

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Additional Information

INSTITUTION

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PATENT STATUS

A U.S. patent, #5,083,102, and Canadian patent, #1,292,785, have been issued on this technology .

LICENSE STATUS

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EXTERNAL RESOURCES

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