

Abstracts

A Low-Loss Unidirectional Dielectric Radiator (UDR) for Antenna and Space Power Combining Circuits (Short Papers)

K. Wu, J. Li and R.G. Bosisio. "A Low-Loss Unidirectional Dielectric Radiator (UDR) for Antenna and Space Power Combining Circuits (Short Papers)." 1994 Transactions on Microwave Theory and Techniques 42.2 (Feb. 1994 [T-MTT]): 339-341.

A low-loss Unidirectional Dielectric Radiator (UDR) is proposed for applications to antenna and space power combining circuits. The operating principle of this novel radiator is explained in detail. Experimental prototypes using polystyrene are fabricated and measured around 9.5 GHz. A coaxial open-ended probe is used to excite this resonant radiator. A detailed study based on experimental results demonstrates interesting characteristics of a broad-beam with gain of up to 10 dBi and low cross-polarization. This type of radiator may find millimeter-wave applications in mobile and satellite communication systems.

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