Abstracts

Hilbert curve fractal antennas with reconfigurable characteristics

K.J. Vinoy, K.A. Jose, V.K. Varadan and V.V. Varadan. "Hilbert curve fractal antennas with reconfigurable characteristics." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 381-384 vol.1.

Fractal Hilbert curve is one of the most recent geometries to be studied for antennas. This geometry results in an antenna with low resonant frequency compared to other configurations. The antenna consists of line segments arranged in a predictable fractal order, thus enabling easy generation and reproducible results compared to an arbitrary shrinkage of antenna size. This can be modeled using wire segments. An addition of few more interconnecting segments to the geometry is found to result in significant changes in its radiation pattern. With RF switches within these few selected additional segments and the necessary control units, radiation pattern of the antenna can be made adaptively reconfigurable. Similarly, switches connected in series along the length of the antenna result in frequency tuning characteristics.

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