Abstracts

Silicon based reconfigurable antennas

A. Fathy, A. Rosen, H. Owen, S. Kanamaluru, F. McGinty, D. McGee, G. Taylor, P.K. Swain, S. Perlow and M. ElSherbiny. "Silicon based reconfigurable antennas." 2001 MTT-S International Microwave Symposium Digest 01.1 (2001 Vol. I [MWSYM]): 377-380 vol.1.

Efforts are under way to revolutionize antenna technology and to increase their functionality and capabilities by implementing fast reconfiguration schemes. Sarnoff Corporation (Sarnoff) has developed a novel silicon based concept for true reconfiguration based on the creation of metallic-like conductivity plasma islands that are driven by dc current. These plasma islands can be precisely formed and controlled using today's high resolution silicon technology, and are utilized to dynamically form plasma holograms for holographic antennas, enabling frequency hopping, beam steering and shaping without the complexity of feed structures, thus providing the performance and capabilities of a phased array without their price.

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