

Abstracts

High-Resolution Adaptive Nulling Performance for a Lightweight Agile EHF Multiple Beam Antenna

A.J. Fenn. "High-Resolution Adaptive Nulling Performance for a Lightweight Agile EHF Multiple Beam Antenna." 1995 MTT-S International Microwave Symposium Digest 95.3 (1995 Vol. III [MWSYM]): 1217-1220.

The design fabrication and measured performance of a lightweight high-resolution adaptive nulling EHF multiple beam antenna (MBA) are addressed. A 127-beam MBA and a four-channel RF nulling network operating over the 43.5 to 45.5 GHz band are used to adaptively null a jammer in anechoic chamber measurements. Lightweight feed horns connected to waveguide transmission lines controlled by ferrite switches are used to select beam positions from the 127-beam MBA. The MBA is designed to provide independent coverage for three communications system users while providing pattern discrimination or nulling of multiple jammers located within 0.1 degree of the user. Cancellation greater than 30 dB when operating in a wide-band mode is experimentally demonstrated.

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