Abstracts

A 94-GHz Radar for Space Object Identification (1969 [MWSYM])

L.A. Hoffman, K.H. Hurlbut, D.E. Kind and H.J. Wintroub. "A 94-GHz Radar for Space Object Identification (1969 [MWSYM])." 1969 G-MTT International Microwave Symposium Digest of Technical Papers 69.1 (1969 [MWSYM]): 475-484.

Theoretical studies at The Aerospace Corporation over the past several years, of the general radar resolution problem have been the stimulus for an experimental program aimed at demonstrating the practicability of utilizing the high inherent resolution potential of millimeter-wavelength radar. In brief, the large bandwidth available at 94 GHz, for example, (several thousand MHz) should enable a radar to obtain a "range profile" of a satellite that shows more details than range profiles at lower frequencies. The high Doppler sensitivity at 94 GHz should permit a precise measurement of the spin rate for spinning satellites; the high carrier frequency offers the possibility of using synthetic aperture processing to "compress" the antenna beam along the track, so that two-dimensional resolution in range and along the track is obtained for better determination of satellite properties.

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