Abstracts

Submillimeter-wave polarimetric compact ranges for scale-model radar measurements

M. Coulombe, J. Waldman, R. Giles, A. Gatesman, T. Goyette and W. Nixon. "Submillimeter-wave polarimetric compact ranges for scale-model radar measurements." 2002 MTT-S International Microwave Symposium Digest 02.3 (2002 Vol. III [MWSYM]): 1583-1586 vol.3.

Fully-polarimetric, wide-band compact radar ranges based on transceivers operating In the submillimeter-wave regime have been developed for obtaining radar measurements on scale models (nominally 1:16). These transceivers use fixed-tuned Schottky-diode mixers and varactor multiplier sources to obtain reasonably wide-band performance. Optically pumped gas lasers, combined with tunable microwave sideband generation In corner-cube-mounted Schottky diodes, have been implemented to extend the operating frequencies into the THz regime. A dielectric material fabrication and characterization capability has also been developed to fabricate custom anechoic materials for the ranges as well as scaled dielectric parts for the models and clutter scenes. The general approach to designing submillimeter-wave compact ranges and the particular details of systems operating at 524 GHz and 1.56 THz will presented in this paper.

❑ Return to main document.