Abstracts

Bistatic Frequency-Swept Microwave Imaging: Principle, Methodology and Experimental Results

D.-B. Lin and T.-H. Chu. "Bistatic Frequency-Swept Microwave Imaging: Principle, Methodology and Experimental Results." 1993 Transactions on Microwave Theory and Techniques 41.5 (May 1993 [T-MTT]): 855-861.

The basic principle, methodology and experimental results of frequency-swept microwave imaging of continuous shape conducting and discrete line objects in a bistatic scattering arrangement are presented. Theoretical analysis is developed under the assumptions of plane wave illumination and physical optics approximation. The measurement system and calibration procedures are implemented based on the plane wave spectrum analysis. Images of three different types of scattering objects reconstructed from the experimental data measured in the frequency range 7.5-12.5 GHz are shown in good agreement with the scattering object geometries. The results demonstrate that the developed bistatic frequency-swept microwave imaging system has potential as a cost-effective tool for the application of remote sensing, imaging radar, and nondestructive evaluation.

❑ Return to main document.