



Electronically Scanned Arrays

By Robert J. Mailloux

Morgan Claypool Publishers, United States, 2007. Paperback. Book Condition: New. 230 x 186 mm. Language: English . Brand New Book. Scanning arrays present the radar or communications engineer with the ultimate in antenna flexibility. They also present a multitude of new opportunities and new challenges that need to be addressed. In order to describe the needs for scanned array development, this book begins with a brief discussion of the history that led to present array antennas. This text is a compact but comprehensive treatment of the scanned array, from the underlying basis for array pattern behavior to the engineering choices leading to successful design. The book describes the scanned array in terms of radiation from apertures and wire antennas and introduces the effects resulting directly from scanning, including beam broadening, impedance mismatch and gain reduction and pattern squint and those effects of array periodicity including grating and quantization lobes and array blindness. The text also presents the engineering tools for improving pattern control and array efficiency including lattice selection, subarray technology and pattern synthesis. Equations and figures quantify the phenomena being described and provide the reader with the tools to tradeoff various performance features. The discussions proceed beyond the introductory...



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