1. Record Nr.   UNINA9910254191303321

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   Titolo   Parallel-Fed Planar Dipole Antenna Arrays for Low-Observable
                       Platforms / / by Hema Singh, Chandini R., Rakesh Mohan Jha

   Pubbl/distr/stampa Singapore : , : Springer Singapore : , : Imprint : Springer, , 2016

   ISBN   981-287-814-9

   Edizione   [1st ed. 2016.]

   Descrizione fisica 1 online resource (58 p.)

   Collana   SpringerBriefs in Computational Electromagnetics, , 2365-6239

   Disciplina   621.3824

   Soggetti   Microwaves
                       Optical engineering
                       Mathematical physics
                       Electronics
                       Microelectronics
                       Microwaves, RF and Optical Engineering
                       Theoretical, Mathematical and Computational Physics
                       Electronics and Microelectronics, Instrumentation

   Lingua di pubblicazione   Inglese

   Formato   Materiale a stampa

   Livello bibliografico   Monografia

   Note generali   Description based upon print version of record.

   Nota di bibliografia   Includes bibliographical references and indexes.

   Nota di contenuto   Introduction -- RCS of Parallel-Fed Planar Dipole Array -- Results and
                       Discussion -- Conclusion.

   Sommario/riassunto This book focuses on determination of scattering of parallel-fed planar
                       dipole arrays in terms of reflection and transmission coefficients at
                       different levels of the array system. In aerospace vehicles, the phased
                       arrays are often in planar configuration. The radar cross section (RCS)
                       of the vehicle is mainly due to its structure and the antennas mounted
                       over it. There can be situation when the signatures due to antennas
                       dominate over the structural RCS of the platform. This necessitates the
                       study towards the reduction and control of antenna/ array RCS. The
                       planar dipole array is considered as a stacked linear dipole array. A
                       systematic, step-by-step approach is used to determine the RCS
                       pattern including the finite dimensions of dipole antenna elements. The
                       mutual impedance between the dipole elements for planar
                       configuration is determined. The scattering till second-level of couplers
                       in parallel feed network is taken into account. The phase shifters are

modelled as delay line. All the couplers in the feed network are assumed to be four port devices. It is shown that the array RCS can be reduced considerably for a low observable platform by an optimization of array design parameters even in the presence of mutual coupling. This book presents a systematic step-by-step analytical formulation for RCS of planar half-wavelength centre-fed dipole arrays through various schematics and illustrations. The analytical description and analysis provided in this book should be useful for students, researchers, and design engineers of phased arrays.