1. Record Nr.   UNINA9910254208803321

   Autore   Singh Hema

   Titolo   RCS Estimation of Linear and Planar Dipole Phased Arrays: Approximate
                            Model / / by Hema Singh, R. Chandini, Rakesh Mohan Jha

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

   ISBN   981-287-754-1

   Edizione   [1st ed. 2016.]

   Descrizione fisica   1 online resource (61 p.)

   Collana   SpringerBriefs in Computational Electromagnetics, , 2365-6239

   Disciplina   621.3848

   Soggetti   Microwaves
                            Optical engineering
                            Mathematical physics
                            Electrical engineering
                            Microwaves, RF and Optical Engineering
                            Theoretical, Mathematical and Computational Physics
                            Communications Engineering, Networks

   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 Linear Dipole Array using
                            Approximate Model -- Linear Dipole Array: Simulation Results -- RCS
                            of Parallel-Fed Planar Dipole Array using Approximate Model -- Planar
                            Dipole Array: Simulation Results -- Conclusion.

   Sommario/riassunto   In this book, the RCS of a parallel-fed linear and planar dipole array is
                            derived using an approximate method. The signal propagation within
                            the phased array system determines the radar cross section (RCS) of
                            phased array. The reflection and transmission coefficients for a signal
                            at different levels of the phased-in scattering array system depend on
                            the impedance mismatch and the design parameters. Moreover the
                            mutual coupling effect in between the antenna elements is an
                            important factor. A phased array system comprises of radiating
                            elements followed by phase shifters, couplers, and terminating load
                            impedance. These components lead to respective impedances towards
                            the incoming signal that travels through them before reaching receive
                            port of the array system. In this book, the RCS is approximated in terms
                            of array factor, neglecting the phase terms. The mutual coupling effect

is taken into account. The dependence of the RCS pattern on the design parameters is analyzed. The approximate model is established as an efficient method for RCS estimation of phased arrays. This book presents a detailed formulation of approximate method to determine RCS of phased arrays, which is explained using schematics and illustrations. This book should help the reader understand the impinging signal path and its reflections/transmissions within the phased array system.