

1. Record Nr.	UNINA9910973047903321
Autore	Kozakoff D. J
Titolo	Analysis of radome-enclosed antennas // Dennis J. Kozakoff
Pubbl/distr/stampa	Boston, : Artech House, c2010
ISBN	9781596934429 1596934425
Edizione	[2nd ed.]
Descrizione fisica	1 online resource (318 p.)
Collana	Artech House antennas and propagation series
Disciplina	621.381 621.3824
Soggetti	Radomes Radar
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 index.
Nota di contenuto	Analysis of Radome-Enclosed Antennas Second Edition; Contents; Foreword; Preface; Acknowledgments; Part I Background and Fundamentals; 1 Overview of Radome Phenomenology; 1.1 History of Radome Development; 1.2 Radome-Antenna Interaction; 1.2.1 Boresight Error (BSE) and Boresight Error Slope (BSES); 1.2.2 Registration Error; 1.2.3 Antenna Sidelobe Degradation; 1.2.4 Depolarization; 1.2.5 Antenna Voltage Standing Wave Ratio (VSWR); 1.2.6 Introduction of an Insertion Loss Due to the Presence of the Radome; 1.3 Significance of Parameters in Radome Performance 1.4 Radome Technology Advances Since the First Edition1.4.1 Use of Metamaterials; 1.4.2 Frequency Selective Radomes; 1.4.3 Concealed Radomes; References; 2 Basic Principles and Conventions; 2.1 Vector Mathematics; 2.2 Electromagnetic Theory; 2.3 Matrices; 2.4 Coordinate Systems and Gimbal Relationships; 2.5 Specialized Antenna Pointing Gimbals; 2.5.1 Maritime SATCOM; 2.5.2 Vehicular Applications; 2.5.3 Airborne Applications; References; Selected Bibliography; 3 Antenna Fundamentals; 3.1 Directivity and Gain; 3.2 Radiation from Current Elements; 3.3 Antenna Array Factor 3.4 Linear Aperture Distributions3.5 Two-Dimensional Distributions; 3.6 Spiral Antennas; References; 4 Radome Dielectric Materials; 4.1 Organic Materials; 4.1.1 Monolithic Radomes; 4.1.2 Sandwich Radomes;

4.2 Inorganic Materials; 4.3 Dual Mode (RF/IR) Materials; 4.3.1 Nonorganic Dual-Mode Materials; 4.3.2 Organic Dual-Mode Materials; 4.4 Effect of Radome Material on Antenna Performance; 4.4.1 Receiver Noise; 4.4.2 Noise Temperature Without Radome; 4.4.3 Noise Temperature with Radome; References; Part II Radome Analysis Techniques; 5 Dielectric Wall Constructions 5.1 Mathematical Formulation for Radome Wall Transmission 5.1 Mathematical Formulation for Radome Wall Transmission; 5.1.2 Transmission Coefficients for Circular Polarization; 5.1.3 Transmission for Elliptical Polarization; 5.2 Radome Types, Classes, and Styles Definition; 5.2.1 Radome Type Definitions; 5.2.2 Radome Class Definitions; 5.2.3 Radome Style Definitions; 5.3 Wall Style Electrical Performance; 5.3.1 Half-Wave Wall Radomes (Style a); 5.3.2 Thin Walled Radomes (Style b); 5.3.3 A Sandwich Radome (Style c); 5.3.4 Multilayer Radomes (Style d); 5.3.5 B-Sandwich Radomes (Style e)

Sommario/riassunto

A radome is a structural, weatherproof enclosure that protects microwave and radar antenna from ice, freezing rain, wind, and debris. This new, updated edition to an Artech House classic provides a current, comprehensive overview of the design and analysis of radomes. The second edition includes a wealth of new material, including three new chapters on radome measurement techniques, environmental effects on radomes, and new radome technology. This unique book helps professionals to design radomes for top performance, understand the effect a radome has on a particular antenna's operation, and become knowledgeable about how to specify acceptable radome equipment. Over 130 illustrations and more than 250 equations support key topics throughout the book. CD-ROM Included! Includes powerful codes and highly useful tools that help professionals estimate the electrical performance degradation that may occur when an antenna system is enclosed by a radome.
