1. Record Nr. UNINA9910792286703321

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Titolo	Radio wave propagation fundamentals / / Artem Saakian
Pubbl/distr/stampa	Norwood, Massachusetts : , : Artech House, , ©2011 [Piscataqay, New Jersey] : , : IEEE Xplore, , [2011]
ISBN	1-60807-138-3
Descrizione fisica	1 online resource (376 p.)
Collana	Artech House radar library
Disciplina	621.384/11
Soggetti	Radio wave propagation
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	Radio Wave Propagation Fundamentals; Contents; Preface; Chapter 1 Introduction; 1.1 Historical Overview; 1.2 Classification of Radio Waves by Frequency Bands; 1.3 The Earth's Atmosphere and Its Structure; 1.4 Classification of Radio Waves by Its Propagation Mechanisms; 1.5 Interferences in RF Transmission Links; Problems; References; Chapter 2 Basics of Electromagnetic Waves Theory; 2.1 Electromagnetic Process; 2.1.1 Maxwell's Equations of Electrodynamics; 2.1.2 Boundary Conditions of Electrodynamics; 2.1.3 Time-Harmonic Electromagnetic Process-Classification of Medi aby Conductivity. 2.2 Free Propagation of Uniform Plane Radio Waves2.2.1 Uniform Plane Wave in Lossless Medium; 2.2.2 Uniform Plane Wave in Lossy Medium; 2.3 Polarization of the Radio Waves; 2.4 Reflection and Refraction of Plane Radio Wave from the Boundary of Two Media; 2.4.1 Normal Incidence on a Plane Boundary; 2.4.2 Oblique Incidence of Vertically Polarized Radio Wave; 2.4.3 Oblique Incidence of Horizontally Polarized Radio Wave; 2.4.4 Reflection of the Radio Wave with Arbitrary Polarization; 2.4.5 Power Reflection and Transmission. 2.4.6 Reflection of the Radio Wave from the Boundary of Nonideal Dielectric Medium2.5 Radiation from Infinitesimal Electric Current Source:Spherical Waves; 2.6 Spatial Area Significant for Radio Waves Propagation; 2.6.1 Principle of Huygens-Kirchhoff; 2.6.2 Fresnel Zones; 2.6.3 Knife-Edge Diffraction; 2.6.4 Practical Applications of the Fresnel Zones Concept; Problems; References; Appendix 2A Useful Mathematical Relations; 2A.1 Trigonometric Equalities; 2A.2 Vector

Analysis; Appendix 2B Polarization of Radio Waves; 2B.1 General Approach.
Appendix 2C Basic Relations in Infinitesimal Electric Current Source Radiation Analysis2C.1 Helmholtz Equation for Vector Potential; 2C.2 Radiation from the Electric Current Point Source; Appendix 2D Fresnel's Integrals; Chapter 3 Basics of Antennas for RF Radio Links; 3.1 Basic Parameters of Antennas; 3.1.1 Radiation Pattern and Directivity; 3.1.2 Radiation Resistance and Loss Resistance; 3.1.3 Antenna Effective Length and Effective Area of the Aperture; 3.2 General Relations in Radio Wave Propagation Theory; Problems; References.
Chapter 4 Impact of the Earth Surface on Propagation of Ground Waves4.1 Propagation Between Antennas Elevated Above the Earth's Surface: Ray-Trace Approach; 4.1.1 Flat Earth Approximation Case Study; 4.1.2 Propagation over the Spherical Earth Surface; 4.1.3 Specifics of Propagation over a Rough and Hilly Terrain; 4.1.4 Optimal Path Clearance and Choice of the Antenna Elevations; 4.1.5 Propagation Prediction Models in Urban, Suburban, and Rural Areas; 4.2 Propagation Between Ground-Based Antennas over the Flat Earth; 4.2.1 Antennas over the Infinite, Perfect Ground Plane.

Sommario/riassunto

Written for professional engineers and students who specialize in antenna, communication and radar systems, this authoritative book provides a thorough introduction to the basic principles of electromagnetic wave propagation of radio frequencies in real-world conditions. It serves as an invaluable daily reference for practitioners in the field and also as a complete, organized text on the subject. This comprehensive resource covers a wide range of essential topics, from the classification of radio waves, electromagnetic wave theory, and antennas for RF radio links ... to the impact of the earth.

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Record Nr.	UNIORUON00350275
Autore	GRAY, Bennison
Titolo	El estilo : el problema y su solución / Bennison Gray ; traducción de Julio Rodriguez-Puértolas y Carmen C. de Rodriguez-Puértolas
Pubbl/distr/stampa	Madrid, : Editorial Castalia, c1974
Descrizione fisica	169 p. ; 20 cm.
Disciplina	400
Soggetti	Linguistica
Lingua di pubblicazione	Spagnolo
Formato	Materiale a stampa
Livello bibliografico	Monografia