1.

Record Nr.	UNINA9911018813303321
Autore	Munk Ben (Benedikt A.)
Titolo	Frequency selective surfaces : theory and design / / Ben A. Munk
Pubbl/distr/stampa	New York, : John Wiley, c2000
ISBN	9786610252923 9781280252921 1280252928 9780470352588 0470352582 9780471723769 0471723762 9780471723776 0471723770
Descrizione fisica	1 online resource (442 p.)
Disciplina	621.381/3
Soggetti	Frequency selective surfaces Electric filters
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 (p. 401-404) and index.
Nota di contenuto	FREQUENCY SELECTIVE SURFACES; CONTENTS; Foreword I; Foreword II; Preface; Acknowledgments; Symbols and Definitions; 1 General Overview; 1.1 What is a Periodic Surface?; 1.2 Passive Versus Active Arrays; 1.3 Dipole Versus Slot Arrays; 1.4 Complementary Arrays; 1.5 A Little History with Physical Insight; 1.6 How Do We "Shape" the Resonant Curve?; 1.6.1 Cascading Periodic Surfaces without Dielectrics; 1.6.2 Single Periodic Surface with Dielectric Slabs; 1.6.3 Real Hybrid Periodic Structures; 1.7 Application of Periodic Structures; 1.7.1 Hybrid Radomes; 1.7.2 Band-Stop Filters 1.7.3 Dichroic Subreflectors1.7.4 Dichroic Main Reflectors; 1.7.5 Circuit Analog Absorbers; 1.7.6 Meanderline Polarizers; 1.8 Common Misconceptions; 1.9 Grating Lobes; 1.10 Problems; 2 Element Types: A Comparison; 2.1 Introduction; 2.2 Group 1: Center Connected or N-Poles; 2.2.1 "Gangbuster" Surface; 2.2.2 Unloaded Tripole Array; 2.2.3

Anchor Element; 2.2.4 Jerusalem Cross; 2.2.5 Square Spiral Element; 2.3 Group 2: Loop Types; 2.3.1 Four-legged Loaded Element; 2.3.2 Three-legged Loaded Element; 2.3.3 Hexagon Element; 2.4 Group 3: Solid Interior Types; 2.5 Group 4: Combination Elements
2.6 Some Common Misconceptions About Elements2.6.1 Array versus Element Effect; 2.6.2 Bandwidth versus Width of the Elements; 2.7 Comparison of Elements; 2.8 Problems; 3 Evaluating Periodic Structures: An Overview; 3.1 Introduction; 3.2 Single Infinite Case; 3.3 Double Infinite Case; 3.4 Example; 3.5 Common Misconceptions; 3.6 Summary of Our Computational Approach; 3.7 Problems; 4 Spectral Expansion of One- and Two-Dimensional Periodic Structures; 4.1 Introduction; 4.2 The Vector Potential dAq from a Single Infinite Column Array of Hertzian Elements with Arbitrary Orientation p
4.3 Vector Potential dA for a Double Infinite Array of Hertzian Elements with Arbitrary Orientation p4.3.1 Rectangular Grid; 4.3.2 Skewed Grid; 4.4 Vector Fields dH(R) and dE(R) for a Double Infinite Array of Hertzian Elements with Arbitrary Orientation p; 4.5 Vector Field E(R) for a Double Infinite Array of Elements with Given Current Distribution I(l) and Arbitrary Orientation p; 4.6 Physical Interpretation; 4.7 Induced Voltages in a Linear Antenna; 4.7.1 By a Single Plane Wave; 4.7.2 By a Plane Wave Spectrum; 4.8 More Physical Insight; 4.8.1 Real Space: ry Positive Real
4.8.2 Imaginary Space: ry Negative Imaginary4.9 Region; 4.10 Self-Impedance of a Single Element and of Arrays; 4.11 Examples; 4.1 1.1 Example I: Scattering from an Array of z-Directed Elements; 4.11.2 Example II: Investigation of RA; 4.1 1.3 Example III: Variation of l with Scan Angle; 4.1 1.4 Example IV Scan Impedance ZA as a Function of Scan Angle; Surface Waves; 4.12 Planar Elements of Arbitrary Shape; 4.12.1 Total Radiated Field from an Array with Segmented Elements; 4.12.2 Induced Voltage in a Segmented Element; 4.12.3 Mutual Impedance Z1',1 for Arrays with Segmented Elements
4.13 Common Misconceptions

Sommario/riassunto

""...Ben has been the world-wide guru of this technology, providing support to applications of all types. His genius lies in handling the extremely complex mathematics, while at the same time seeing the practical matters involved in applying the results. As this book clearly shows, Ben is able to relate to novices interested in using frequency selective surfaces and to explain technical details in an understandable way, liberally spiced with his special brand of humor... Ben Munk has written a book that represents the epitome of practical understanding of Frequency Selective Surfaces. He deser