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""2.6.1 Fast Multipole Method (FMM)"""; ""2.6.2 Examples"""; ""2.6.3 Model Order Reduction for Fast Frequency Sweep"""; ""2.6.4 Example"""; ""2.7 High-Frequency Techniques"""; ""2.7.1 Physical Optics (PO) and Geometrical Optics (GO)"""; ""2.7.2 Example"""; ""2.7.3 Geometrical Theory of Diffraction and Uniform Theory of Diffraction"""; ""References"""; ""Chapter 3 Electrically Small Feeds"""; ""3.1 Introduction"""; ""3.2 Design Requirements"""; ""3.3 Waveguide Feeds"""; ""3.3.1 Small Waveguide Feeds"""; ""3.3.2 Small Coaxial Feeds"""; ""3.3.3 Small Wide Angle Feeds"""; ""3.3.4 Small Backfire Feeds"""; ""3.4 Microstrip Feeds"""; ""3.4.1 Single Patch Antenna as the Reflector Feed"""; ""3.4.2 Planar Antenna Array Feeds"""; ""3.5 Backfire Printed Dipole Feeds"""; ""3.5.1 Design Approach"""; ""3.5.2 Performance Results"""; ""3.5.3 Printed Dipole Performance with a Reflector"""; ""3.6 Asymmetric Feeds"""; ""3.7 Feed Pattern Shaping by Superstrate Loading"""; ""References"""; ""Chapter 4 Smooth Wall Multimode Horns for High Aperture Efficiency Theory, Design, and Applications"""; ""4.1 Introduction"""; ""4.2 Theory for High Aperture Efficiency"""; ""4.3 Circular Aperture"""; ""4.3.1 Realization of the Modes"""; ""4.3.2 Circular Horn Design"""; ""4.3.3 Three-Step Horn"""; ""4.4 Square High-Efficiency Horn"""; ""4.5 Multiflared High-Efficiency Horns"""; ""4.6 Other High-Efficiency Horn Structures"""; ""4.7 Applications"""; ""4.7.1 In Direct Radiating Arrays"""; ""4.7.2 In Multiple-Beam Reflectors"""; ""4.8 Conclusions"""; ""References"""; ""Chapter 5 Profiled Horns and Feeds"""; ""5.1 Introduction"""; ""5.2 Basis of Optimum Horns"""; ""5.2.1 Pattern Constraints"""; ""5.2.2 Input Mismatch"""; ""5.2.3 Aperture Efficiency"""; ""5.2.4 Phase Center Stability"""; ""5.2.5 Compactness and/or Physical Constraint Due to Existing Environment"""

Sommario/riassunto

This is the first truly comprehensive and most up-to-date handbook available on modern reflector antennas and feed sources for diversified space and ground applications. There has never been such an all-encompassing reflector handbook in print, and no currently available title offers coverage of such recent research developments. The Handbook consists of three volumes. Volume II focuses on feed sources. Reflector antennas are extraordinary devices that combine high gain with geometrical simplicity, and can operate in broad frequency bands. Their performance, however, depends on the electrical
