1. Record Nr. UNINA9910831030403321

Titolo	Advanced millimeter-wave technologies [[electronic resource]] : antennas, packaging and circuits / / Duixian Liu ... [et al.]
Pubbl/distr/stampa	Chichester, U.K. ; ; Hoboken, NJ, : J. Wiley & Sons, 2009
ISBN	0-470-74296-8 1-282-03138-4 9786612031380
Descrizione fisica	1 online resource (851 p.)
Altri autori (Persone)	LiuDuixian
Disciplina	621.381
Soggetti	Millimeter wave devices Millimeter waves
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	1 Introduction ; 1.1 Challenges ; 1.2 Discussion Framework ; 1.3 Circuits ; 1.4 Antenna ; 1.5 RF Electronics ; .5.1 Receiver ; 1.5.2 Transmitter ; 1.6 Packaging ; 1.7 Organization and Flow of this Book ; References ; 2 Millimeter-wave Packaging ; 2.1 Introduction ; 2.1.1 Definition of Packaging ; 2.1.2 Packaging Challenges and Future Directions ; 2.2 Review of Microwave Packaging Technologies ; 2.2.1 MMICs ; .4.7 Wafer-level Packaging and Assembly of mmWave Devices ; 2.5 Package Codesign at mmWaves ; 2.5.1 Electromagnetic Modeling of mmWave Packages and Interconnects ; 2.5.2 Integrated Antennas ; References ; 3 Dielectric Properties at Millimeter-wave and THz Bands ; 3.1 Introduction ; 3.2 Dielectric Characterization""; 3.3 Outside the THz Gap a€?Material Characterization Techniques ; 3.3.1 Parallel Plate (~DCa€?30 MHz) ; 3.3.2 Resonant Cavity (~0.5a€?50 GHz) ; 3.3.3 Transmission Line Methods (~0.01a€?300 GHz) ; 3.3.4 THz TDS (~0.1a €?10 THz) ; 3.4 THz TDS (~0.1a€?10 THz) ; 3.4.1 Transmission ; 3.4.2 Error Analysis ; 3.5 Dielectric Properties ; 3.5.1 Semiconductors ; 3.5.2 Ceramic Materials ; 3.5.3 Thin Films ; 3.5.4 Metamaterials ; 3.5.5 Biomaterials ; 3.5.6 Material Needs ; References ; 4 Millimeter-wave Interconnects ; 4.1 Introduction ; 4.2 Interconnects at Millimeter-wave Frequencies 4.2.1 Printed Planar Transmission Lines ; 4.2.2 Metal

Rectangular Waveguides ; 4.3 Interconnect Technology Options for Millimeter-wave Applications ; 4.3.1 Basic Technological Requirements ; 4.3.2 MCM-L ; 4.3.3 LTCC ; 4.3.4 MCM-D ; 4.3.5 Flexible Substrates ; 4.3.6 Silicon Micromachining ; 4.3.7 Plastic Injection Molding ; 4.4 Performance-oriented Interconnect Technology Optimization ; 4.4.1 Performance-oriented BCB Dielectric Thickness Optimization ; 4.4.2 Transmission Line Discontinuities and Distributed Passives ; 4.4.3 Bends ; 4.5 Chip-to-package Interconnects at Millimeter-wave Frequencies ; 4.5.1 Wirebonding ; 4.5.2 Flip-chip Bonding ; 4.5.3 Alternative Chip Interconnection Methods ; References ; 5 Printed Millimeter Antennas a€? Multilayer Technologies