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Nota di bibliografia	Includes bibliographical references at the end of each chapters and index.
Nota di contenuto	Preface -- Carl Baum, a great man and eminent scientist -- Several Years of Interaction with Carl E. Baum -- Part I: Theory and Modeling -- Quantifying uncertainties strength from electromagnetic stochastic simulations -- Transmission-Line Super Theory as Antenna Theory for Linear Structures -- Electromagnetic Coupling to Transmission Lines with Symmetric Geometry inside Rectangular Resonators -- Analysis of Open TEM-Waveguide Structures -- Antenna radiation in the presence

of an infinite interface -- A Standard for Characterizing Antenna Performance in the Time Domain -- Time-Domain Distortion Characterization of Electromagnetic Field Sensors Using Hermite-Gauss Subspaces -- Amplification of signal intensity in imaging through discrete random media through signal interference gating and the use of mutual coherence function -- Propagation of Short Pulses through an Ionosphere Modelled by a Cold Plasma -- Electromagnetic Environment of Grounding Systems -- Lightning Modeling: a Global Circuit Tool -- Fully Absorbing Conditions in the Study of Axially-Symmetrical UWB Radiators -- Part II: Time Domain Computational Techniques -- The New Vector Fitting Approach to Multiple Convex Obstacles Modeling for UWB Propagation Channels -- FDTD Analysis of Shielding in High-Tc Microstrip Resonators on Anisotropic Substrates -- Parametric Evaluation of Absorption Losses and Comparison of Numerical Results to Boeing 707 Aircraft Experimental HIRF Results -- Part III: Antennas -- Directional Dependence of the Minimum Phase Property of the TEM Horn Transfer Function -- UWB Dual Polarized Antenna for HPEM Sources -- Modal Analysis of Reflector backed Hybrid Printed dipole antenna -- A Novel Class of Reconfigurable Spherical Fermat Spiral Multi-Port Antennas -- Highly Directive Multi-Band Circular Patch Antenna Partially filled with ENG-metamaterial -- Part IV: Pulsed Power -- A New Set of Electrodes for Coaxial Quarter Wave Switched Oscillators -- Performances of a compact, high-power, wideband electromagnetic source with circular polarization -- Design Considerations for a Switch and Lens System for Launching 100 ps -- Part V: UWB Interaction -- Threat Scenario, Effect and Criticality Analysis Methodology -- On the Use of Probabilistic Risk Analysis for IEMI -- Susceptibility of Electrical Systems to UWB Disturbances due to Layout of Exit Cables -- Breakdown Behavior of a Wireless Communication Network under UWB Impact -- The technique for evaluating the immunity of digital devices to the influence of ultrawideband electromagnetic pulses -- Reciprocity theorem: practical application in EMC measurements -- Coupling of Hyperband Signals with an Underground Cable -- Part VI: SP Measurement -- HPM Detector with Extended Detection Features -- High Dynamic Range, Wide Bandwidth Electromagnetic Field Threat Detector Resistive Sensor for High Power Microwave Pulse Measurement in Double Ridged Waveguide -- Predetection for the Identification of Electromagnetic Attacks against Airports -- HF impedance measurement of electronic devices using a de-embedding technique Automated and Adaptive RF Effects TestingPockels' Effect Based Probe for UWB and HPEM Measurements -- Part VII: UWB Sensing -- Estimating location and magnetic polarizability tensor of buried metallic targets for landmine clearance -- Toward the Combination of Backprojection and Trilateration for Through-Wall Imaging -- Toward Integrated µNetwork Analyzer -- M-Sequence Based Single Chip UWB-Radar Sensor -- UWB Antennas for CW Terahertz Imaging: Geometry Choice Criteria -- UWB Antennas for CW Terahertz Imaging: Crosstalk Issues -- Evaluation of Imaging Algorithms for Prototype UWB Microwave Tomography Systems -- Index.

Sommario/riassunto

This book presents contributions of deep technical content and high scientific quality in the areas of electromagnetic theory, scattering, UWB antennas, UWB systems, ground penetrating radar (GPR), UWB communications, pulsed-power generation, time-domain computational electromagnetics, UWB compatibility, target detection and discrimination, propagation through dispersive media, and wavelet and multi-resolution techniques. Ultra-wideband (UWB), short-pulse (SP) electromagnetics are now being used for an increasingly wide

variety of applications, including collision avoidance radar, concealed object detection, and communications. Notable progress in UWB and SP technologies has been achieved by investigations of their theoretical bases and improvements in solid-state manufacturing, computers, and digitizers. UWB radar systems are also being used for mine clearing, oil pipeline inspections, archeology, geology, and electronic effects testing. Like previous books in this series, Ultra-Wideband Short-Pulse Electromagnetics 10 serves as an essential reference for scientists and engineers working in these applications areas. Presents the state-of-the-art of ultra-wideband electromagnetics, signals, and systems Covers theory, technology, and cutting-edge applications Features selected, peer-reviewed contributions from the UWB-SP11 Conference in Toulouse, France.