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Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Introduction to Electromagnetic Compatibility Second Edition; Contents; Preface; 1 Introduction to Electromagnetic Compatibility (EMC); 1.1 Aspects of EMC; 1.2 History of EMC; 1.3 Examples; 1.4 Electrical Dimensions and Waves; 1.5 Decibels and Common EMC Units; 1.5.1 Power Loss in Cables; 1.5.2 Signal Source Specification; Problems; References; 2 EMC Requirements for Electronic Systems; 2.1 Governmental Requirements; 2.1.1 Requirements for Commercial Products Marketed in the United States; 2.1.2 Requirements for Commercial Products Marketed outside the United States 2.1.3 Requirements for Military Products Marketed in the United States2.1.4 Measurement of Emissions for Verification of Compliance; 2.1.4.1 Radiated Emissions; 2.1.4.2 Conducted Emissions; 2.1.5 Typical Product Emissions; 2.1.6 A Simple Example to Illustrate the Difficulty in Meeting the Regulatory Limits; 2.2 Additional Product Requirements;

2.2.1 Radiated Susceptibility (Immunity); 2.2.2 Conducted Susceptibility (Immunity); 2.2.3 Electrostatic Discharge (ESD); 2.2.4 Requirements for Commercial Aircraft; 2.2.5 Requirements for Commercial Vehicles; 2.3 Design Constraints for Products
2.4 Advantages of EMC DesignProblems; References; 3 Signal Spectra-the Relationship between the Time Domain and the Frequency Domain; 3.1 Periodic Signals; 3.1.1 The Fourier Series Representation of Periodic Signals; 3.1.2 Response of Linear Systems to Periodic Input Signals; 3.1.3 Important Computational Techniques; 3.2 Spectra of Digital Waveforms; 3.2.1 The Spectrum of Trapezoidal (Clock) Waveforms; 3.2.2 Spectral Bounds for Trapezoidal Waveforms; 3.2.2.1 Effect of Rise/Falltime on Spectral Content; 3.2.2.2 Bandwidth of Digital Waveforms; 3.2.2.3 Effect of Repetition Rate and Duty Cycle
3.2.2.4 Effect of Ringing (Undershoot/Overshoot)3.2.3 Use of Spectral Bounds in Computing Bounds on the Output Spectrum of a Linear System; 3.3 Spectrum Analyzers; 3.3.1 Basic Principles; 3.3.2 Peak versus Quasi-Peak versus Average; 3.4 Representation of Nonperiodic Waveforms; 3.4.1 The Fourier Transform; 3.4.2 Response of Linear Systems to Nonperiodic Inputs; 3.5 Representation of Random (Data) Signals; 3.6 Use of SPICE (PSPICE) In Fourier Analysis; Problems; References; 4 Transmission Lines and Signal Integrity; 4.1 The Transmission-Line Equations; 4.2 The Per-Unit-Length Parameters
4.2.1 Wire-Type Structures4.2.2 Printed Circuit Board (PCB) Structures; 4.3 The Time-Domain Solution; 4.3.1 Graphical Solutions; 4.3.2 The SPICE Model; 4.4 High-Speed Digital Interconnects and Signal Integrity; 4.4.1 Effect of Terminations on the Line Waveforms; 4.4.1.1 Effect of Capacitive Terminations; 4.4.1.2 Effect of Inductive Terminations; 4.4.2 Matching Schemes for Signal Integrity; 4.4.3 When Does the Line Not Matter, i.e., When is Matching Not Required?; 4.4.4 Effects of Line Discontinuities; 4.5 Sinusoidal Excitation of the Line and the Phasor Solution
4.5.1 Voltage and Current as Functions of Position

Sommario/riassunto

A Landmark text thoroughly updated, including a new CDAs digital devices continue to be produced at increasingly lower costs and with higher speeds, the need for effective electromagnetic compatibility (EMC) design practices has become more critical than ever to avoid unnecessary costs in bringing products into compliance with governmental regulations. The Second Edition of this landmark text has been thoroughly updated and revised to reflect these major developments that affect both academia and the electronics industry. Readers familiar with the First Edition will find much new mater