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Nota di contenuto	Contents; Preface; Acknowledgment; Some EMC-Related and Metric Terms and Acronyms; Common Terms and Abbreviations in EMC Literature; Military EMI/EMC Standards; Chapter 1. Introduction to Electronic System Design for EMC; 1.1 Effects of EMI; 1.2 Sources of EMI; 1.3 Modes of Coupling; 1.4 Susceptible Equipments; 1.5 EMC Design Consideration vs. System Life Cycle; 1.5.1 System Definition Phase; 1.5.2 System Design and Development; 1.5.3 System Operation; 1.6 Overview of Handbook; Suggested Readings: EMI/EMC; Chapter 2. Basic Terms and Definitions; 2.1 Decibels; 2.2 EMI Conducted Terminology 2.3 EMI Radiated Terminology2.4 Representation of Signals in the Time and Frequency Domains; 2.4.1 Fourier Series; 2.4.2 Fourier Transform; 2.4.3 Spectral Representation; 2.5 Transients; 2.5.1 Transient Sources; 2.6 Narrowband Emissions; 2.7 Broadband Emissions; 2.7.1 Incoherent Broadband Emission; 2.8 Frequency and Wavelength; 2.9 Units of Measure for EMI Signals; Suggested Readings: Basic Terms and Definitions; Chapter 3. Communication Systems EMC; 3.1 Communication System EMI Problems; 3.2 EMI Interactions between Transmitters and Receivers; 3.3 EMC Design of Communication Systems 3.4 Transmitter Emission Characteristics3.4.1 Fundamental Emissions; 3.4.2 Transmitter Intermodulation; 3.4.3 Harmonic Emission Levels; 3.5 Receiver Susceptibility Characteristics; 3.5.1 Co-channel Interference; 3.5.2 Receiver Adjacent-Signal Interference; 3.5.3 Receiver Spurious

Responses; 3.6 Antenna Radiation Characteristics; 3.6.1 Design Frequency and Polarization; 3.6.2 Polarization Dependence; 3.6.3 Nondesign Frequencies; 3.7 Propagation Effects; 3.8 Sample EMC Assessment; 3.8.1 Transmitter Noise; 3.8.2 Intermodulation; 3.8.3 Out-of-Band EMI; 3.9 Computer EMC Analysis
 Suggested Readings: Communication Systems EMC
 Chapter 4. Electronic System Design for EMC; 4.1 Basic Elements of EMI Problems; 4.1.1 Sources of EMI; 4.1.2 EMI Modes of Coupling; 4.1.3 Susceptible Equipments; 4.2 System-Level EMI Control; Suggested Readings: Electronic System Design for EMC; Chapter 5. Grounding for the Control of EMI; 5.1 Definitions; 5.2 Characteristics of Grounding Systems; 5.2.1 Impedance Characteristics; 5.2.2 Antenna Characteristics; 5.3 Ground-Related Interference; 5.4 Circuit, Equipment, and System Grounding; 5.4.1 Single-Point Grounding Scheme; 5.4.2 Multipoint Grounding Scheme; 5.4.3 Selection of a Grounding Scheme; 5.5 Ground System Configurations; 5.6 EMI Control Devices and Techniques; Suggested Readings: Grounding; Chapter 6. Shielding Theory, Materials, and Protection Techniques; 6.1 Field Theory; 6.2 Shielding Theory; 6.2.1 Absorption Loss; 6.2.2 Reflection Loss; 6.2.3 Reflection Loss to Plane Waves; 6.2.4 Reflection Loss to Electric and Magnetic Fields; 6.2.5 Composite Absorption and Reflection Loss; 6.3 Shielding Materials; 6.4 EMI Shield Compartments and Equipments; 6.5 Shielding Integrity Protection
 6.5.1 Integrity of Shielding Configurations

Sommario/riassunto

This handbook outlines the factors that must be considered in designing circuits, equipment, and systems for electromagnetic compatibility (EMC). It teaches circuit and system designers practical approaches to thwart the ever present culprit of electromagnetic interference (EMI). By emphasizing the fundamentals, it provides information that will help readers understand the rationale that forms the basis for many of the EMC practices and procedures. There is much information about these topics available in disparate forms (journal articles, symposia proceedings, etc.) but this book brings the c