1. Record Nr. UNINA9910366591703321

Autore	Belous Anatoly
Titolo	High-Speed Digital System Design : Art, Science and Experience / / by Anatoly Belous, Vitali Saladukha
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-030-25409-7
Edizione	[1st ed. 2020.]
Descrizione fisica	1 online resource (XXXVII, 933 p. 751 illus., 532 illus. in color.)
Disciplina	621.3815 621.38104
Soggetti	Electronic circuits Electronics Microelectronics Computer engineering Internet of things Embedded computer systems Circuits and Systems Electronics and Microelectronics, Instrumentation Cyber-physical systems, IoT
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Chapter 1. Information And Communication Technologies And Systems Based On Them -- Chapter 2. Wired Interfaces Of High-Speed Electronic Devices -- Chapter 3. Wireless Telecommunication Systems -- Chapter 4. Basic Components Of Telecommunication Systems -- Chapter 5. Specialized Chips For Telecommunication Systems -- Chapter 6. Methods And Means Of Ensuring Interference Resistance Of High-Speed Electronic Devices -- Chapter 7. Basics Of Designing Structures Of Printed Circuit Boards Of High-Speed Electronic Devices -- Chapter 8. Packaging Technologies For Electronic Devices -- Chapter 9. Protection Of High-Speed Electronic Devices From Electromagnetic Interference -- Chapter 10. Power Supply Systems Of High-Speed Electronic Devices -- Chapter 11. Measurement And Analysis Of SHF Devices.

Sommario/riassunto

This book describes for readers the entire, interconnected complex of theoretical and practical aspects of designing and organizing the production of various electronic devices, the general and main distinguishing feature of which is the high speed of processing and transmitting of digital signals. The authors discuss all the main stages of design - from the upper system level of the hierarchy (telecommunications system, 5G mobile communications) to the lower level of basic semiconductor elements, printed circuit boards. Since the developers of these devices in practice deal with distorted digital signals that are transmitted against a background of interference, the authors not only explain the physical nature of such effects, but also offer specific solutions as to how to avoid such parasitic effects, even at the design stage of high-speed devices. Provides a comprehensive, single-source reference on the design of high-speed digital system design; Discusses all levels of abstraction, from system to device; Includes necessary background information on the physical mechanisms and principles of operation, while explaining in practical terms the principles of calculation and design of these systems and devices.