DESCRIPTION

In undergraduate classes on communications it is crucial for the students to acquire a deep and thorough understanding of the system principles, methods of analysis, and design tradeoffs. *Communication Systems: Fundamentals and Design Methods* provides a rigorous mathematical treatment of modulations, covering well-established analog techniques, such as AM and FM, and the more advanced digital formats, such as QAM and CDMA. Using a probabilistic approach, the analytical evaluation of system performance gives rise to the key concept of 'link budget', showing the role of transmit power, channel bandwidth and receiver noise level. Different systems are then compared on the basis of the above parameters.

Key features:

- Comprehensively covers the basics of communication systems, without overemphasizing new technologies which require a much deeper background
- Presents a clearly outlined course track, derived from years of teaching experience
- Enriched by discussions and examples of implementation, and by a wide variety of almost 300 problems, with solutions provided in the companion website
- Includes coverage of deterministic and random signals, as well as transmission media and devices, passband signals, linear, amplitude, angular, digital and binary modulation
The book is a perfect textbook for undergraduate students on electrical engineering, computer science and telecommunications courses, as well as graduate students, engineers and operators involved in the design and deployment of communication networks.

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FEATURES

- Provides students with a thorough understanding of the fundamental theory of communication systems
- Presents models for transmission systems as well as the analytical tools for evaluating their performance.
- Significantly, the relationship between performance and link parameters are developed
- In particular, the principles of analog and digital modulation techniques are supplied, including examples from well established techniques, such as AM and FM, to more advanced digital formats like CDMA and OFDM.
- Written in a pedagogical style, the text is well illustrated with examples and problems, plus an accompanying solutions manual.

For additional product details, please visit https://www.wiley.com/en-us