



Ellingson

Radio Systems Engineering

Using a systems framework, this textbook provides a clear and comprehensive introduction to the performance, analysis, and design of radio systems for students and practicing engineers. Presented within a consistent framework, the first part of the book describes the fundamentals of the subject: propagation, noise, antennas, and modulation. The analysis and design of radios including RF circuit design and signal processing is covered in the second half of the book. The former is presented with minimal involvement of Smith charts, enabling students to grasp the fundamentals more readily. Both traditional and software-defined/direct sampling technology are described, with pros and cons of each strategy explained. Numerous examples within the text involve realistic analysis and design activities, and emphasize how practical experiences may differ from theory or taught procedures. End-of-chapter problems are provided, as are a password-protected solutions manual and lecture slides to complete the teaching package for instructors.

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“Radio Systems Engineering offers a comprehensive introduction to the architecture and components of radio systems. It reviews all the fundamentals that students need to understand today’s wireless communication systems, including modern modulation schemes, radio wave propagation, and noise impact. It also covers all the blocks of modern radio transmitter and receiver systems, such as antennas, filters, amplifiers, and signal processing. This textbook gives engineering students a complete overview of radio systems and provides practicing wireless engineers with a convenient comprehensive reference.”

Patrick Roblin, *Ohio State University*

Radio Systems Engineering

STEVEN W. ELLINGSON

Virginia Polytechnic Institute and State University



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