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## Ultrawideband Short-Pulse Radio Systems

V. I. Koshelev, Yu. I. Buyanov, V. P. Belichenko

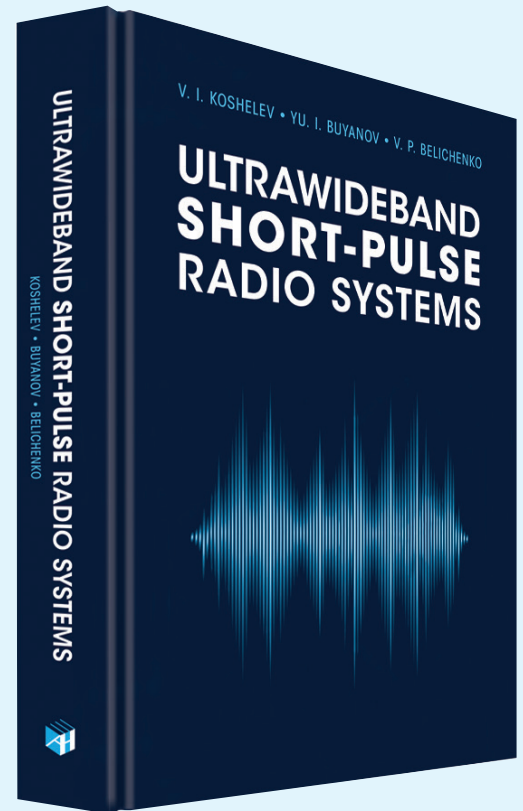
- Provides a comprehensive treatment of the methods, analysis, and practice of impulse and ultrawideband (UWB) systems. Sources, antennas, propagation, electromagnetic theory, and actual practical systems are explored;
- Provides novel perspective on impulse and short-pulse wireless engineering along with practical guidance on how to build antennas and radio hardware for high-power impulse signals;
- Presents theoretical and experimental results in the time-frequency domain;
- Explains and discusses the scattering of UWB electromagnetic pulses by conducting and dielectric objects;
- Impulse responses of objects and propagation channels are explored with details of signal models and their spectral characteristics and uses of regularization of a Kramers-Kronig type relation for estimating transfer functions;
- Discusses the development of high-power sources of UWB radiation with megavolt effective potential on the base of combined antenna arrays excited with bipolar voltage pulses;
- Includes chapters on receiving antennas, transmitting antennas, and antenna arrays along with details on high-power UWB radiation sources as well as problem sets.

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