



# Transmission Lines: Equivalent Circuits, Electromagnetic Theory, and Photons (The Cambridge RF and Microwave Engineering Series)

*By Richard Collier*

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This rigorous treatment of transmission lines presents all the essential concepts in a clear and straightforward manner. Key principles are demonstrated by numerous practical worked examples and illustrations, and complex mathematics is avoided throughout. Early chapters cover pulse propagation, sinusoidal waves and coupled lines, all set within the context of a simple lossless equivalent circuit. Later chapters then develop this basic model by demonstrating the derivation of circuit parameters, and the use of Maxwell's equations to extend this theory to major transmission lines. Finally, a discussion of photonic concepts and properties provides valuable insights into the fundamental physics underpinning transmission lines. Covering DC to optical frequencies, this accessible text is an invaluable resource for students, researchers and professionals in electrical, RF and microwave engineering.

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"... presents the theory from three perspectives: equivalent circuit model, electromagnetics, and photons ... The end-of-chapter bibliographies are nicely categorized by subject to allow an easier review ... Recommended."

B. Kordi, Choice

#### **About the Author**

Richard Collier is a former Director of the Electronic Engineering Laboratory at the University of Kent, and a former Senior Research Associate and Affiliated Lecturer at the Cavendish Laboratory, University of Cambridge. He is a Chartered Engineer and a Fellow of the IET.

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