



Telecommunication Systems In Urban Infrastructures

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Product Description

Telecommunication Systems In Urban Infrastructures Modern cities run on connectivity. From smart transport and energy grids to IoT-enabled homes and resilient emergency networks, telecommunication systems form the invisible backbone of urban life. Telecommunication systems in Urban Infrastructure delivers a comprehensive, practical, and future-focused exploration of how communication technologies design, support, and transform smart cities. This book bridges theory and real-world application, guiding students, engineers, planners, and policymakers through the full ecosystem of urban telecommunication - from foundational signal principles to emerging 6G, AI-driven networks, and cyber-resilient infrastructure. **Readers will explore:**

- Core principles of wired and wireless telecommunication systems
- Smart city connectivity for transport, utilities, building, and public spaces
- IoT integration, cyber security, and urban data privacy
- Planning, deployment, and economic challenges in dense urban environments
- Cutting-edge technologies including AI optimization, edge/cloud computing, and quantum communication
- Global smart city case studies and future sustainability trends

Each chapter is carefully structured with:

- Concept explanations grounded in real urban scenarios
- Numerical problems and technical exercises
- Short questions and multiple-choice assessments
- Projects ideas with guided solution
- Practical insights into standards, regulations, and infrastructure planning

With coverage spanning telecom fundamentals, smart utilities, mobility systems, urban IoT, security frameworks, and next-generation networks, this book provides a complete roadmap for designing and managing connected cities. Whether you are preparing for academic study, professional deployment, or research in smart infrastructure, this text equips you with the technical depth, analytical tools, and systems perspective required building the cities of tomorrow. Build smarter networks. Design resilient cities. Shape the connected future.



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Author

Prof. A. B. Bhattacharya, Pro-Vice-Chancellor of JIS University, did his M. Sc. and Ph. D. degree in Physics from the University of Calcutta. He did his Post-doc from the Massachusetts Institute of Technology, USA and subsequently joined in the Department of Physics, Kalyani University. He has published 256 Research papers in high-impact Journals and over 150 proceeding papers in conferences. He has successfully guided 24 scholars for their Ph.D. and has written a large number of invited articles in many Journals. He is the author of 29 textbooks written for engineering and science students and also for general readers from many reputed publishers like Infinity Science Press, Taylor & Francis, etc. International Institute of Success Awareness honored him with their most coveted Institutional and globally reputed “Glory of India Gold Medal” for remarkable contributions to India’s national prestige. He is a Life Fellow of the Institution of Electronics and Telecommunication Engineers.

