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Nota di contenuto	Front cover; Title page; Copyright page; Table of contents; Preface; Chapter 1 Introduction to cellular telecommunications; Beginnings; Overview of the systems; Chapter 2 Radio waves and propagation; Electric fields; Magnetic fields; Radio waves; Frequency-to-wavelength conversion; Polarization; How radio signals travel; Refraction, reflection and diffraction; Coverage and network planning; Chapter 3 Modulation; Radio carrier; Amplitude modulation; Modulation index; Frequency modulation; Modulation index and deviation ratio; Sidebands; Bandwidth; Improvement in signal-to-noise ratio Frequency shift keying Phase modulation; Phase shift keying; Minimum shift keying; Quadrature amplitude modulation; Spread spectrum techniques; Frequency hopping; Direct sequence spread spectrum; Orthogonal frequency division multiplex; Bandwidth and data capacity; Summary; Chapter 4 Cellular basics; Spectrum re-use; Multiple access schemes; Duplex operation; Setting up calls; Receiving and making a call; Handover and handoff; Channel usage; Infrastructure; Base transceiver station; Mobile switching centre; Mobile phone; Voice coding; Digital data structures; Chapter 5 Analogue systems; Today

Basic system Base station; Mobile switching centres; Mobile equipment; Voice messaging; Signalling methods; Control channels; Forward control channel; Reverse control channel; Call initiation; Paging and incoming call set-up; Handoff; Summary; Chapter 6 GSM; System architecture; Equipment and subscriber identifiers; Air interface; Power levels; Multiple access and channel structure; Vcoders; Operation; General packet radio service; GPRS network structure; Layers; GPRS mobiles; GPRS coding; GPRS physical channel; Channel allocation; GPRS operation; EDGE; Time slots; Data coding and throughput

Operation Chapter 7 North American TDMA; System overview; RF signal; Channels; Paging; Handoff; Authentication; PDC; Chapter 8 cdmaOne/IS-95; Standards; Spreading codes; Radio signal construction; Channels; Forward link code channels; Reverse channels; Power control; Handoff; Discontinuous reception; Call processing; Vcoders; Advantages of CDMA; Chapter 9 CDMA2000; 1X and 3X; Radio configurations; CDMA2000 1X; Power control; Beam formatting; Channels; Packet data; Handoff; CDMA2000 1xEV-DV; New features; Base station selection; Release D; Broadcast and multicast services; Fast call set-up

Mobile equipment identifier CDMA2000 1xEV-DO; EV-DO air interface; Forward link; Reverse link; Mobile IP; Chapter 10 UMTS; Capabilities; System architecture overview; User equipment; Radio network sub-system; Protocols; Air interface; Spreading; Synchronization; Power control; Frames, slots and channels; Logical channels; Transport channels; Physical channels; Packet data; Speech coding; Discontinuous reception; Access stratum protocol layers; Handover; Inter-system handover; The evolution of 3G networks; Chapter 11 Position location; Cell ID; TDOA; A-GPS; GPS; Assistance from the base station A-GPS

Sommario/riassunto

Among the many books published on 3G and cellular telecommunications, this introduction stands out due to its broad coverage of the subject and straightforward explanations of the principles and applications using a minimum of maths. Writing as an engineer for engineers, Ian Poole provides a systems-level view of the fundamentals that will enhance the understanding of engineers involved working in this fast-paced field. Equally, the book helps students, technicians and equipment manufacturers to gain a working knowledge of the applications and technologies involved in cellular communications.
