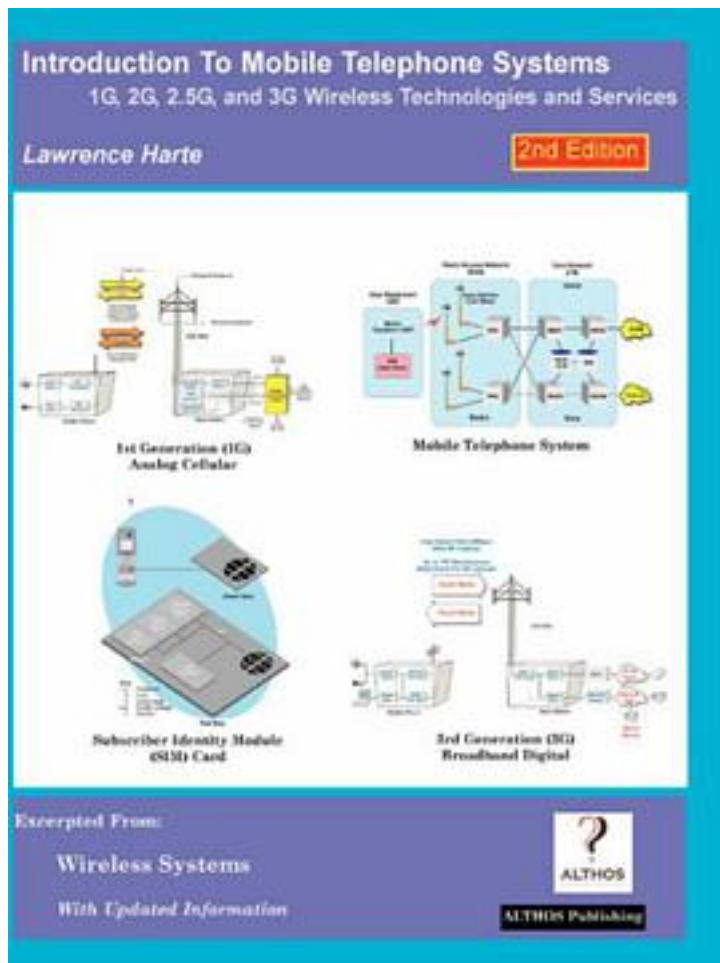


# Introduction to Mobile Telephone Systems, 2nd Edition, 1G, 2G, 2.5G, and 3G Technologies and Services



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This book explains the different types of mobile telephone systems and how they are evolving from 1st generation analog, through 2nd generation digital to high-speed 3rd generation digital broadband systems. It describes the key components, how they operate and the different types of wireless voice, data and information services they can provide. You will learn the terminology (terms and acronyms) for mobile telephone systems along with the key technologies. Learn how speech compression (voice coding) operates and how it allows more than 10 times as many users to share a single communication channel. Discover the different types of system access technologies including FDMA, TDMA, CDMA and SDMA. Explained are the basic types of modulation technologies and how they are evolving to increase the data transmission rates with less available bandwidth. Find out why and how cellular systems are converting from dedicated circuit switched connections to high-speed packet data systems. The key parts of mobile communication systems are described including mobile equipment, radio access network (RAN) and the core network (CN). You will learn the basic operation of the base stations and how they may communicate with mobile switching systems (MSC) for voice communication or how they communicate with packet switching systems for data communication (such as accessing the Internet). You will learn about the different types of mobile devices including multi-mode handsets, embedded communication devices, data-only cards and adapter boxes. Learn the key types of 1st generation analog cellular systems including AMPS, TACS, NMT, MCS, CNET and MATS-E. Discover how 2nd generation digital cellular increased the system efficiency to allow between 3 to 20 times the number of customers to share each radio channel. You will learn the basics about GSM, IS-136 TDMA and CDMA systems. Explained is the evolution of 2nd generation mobile systems into 2.5G systems that can offer medium speed data services (approximately 500 kbps). The systems covered include GPRS, EDGE, EVDO and EVDV. The wideband 3rd generation systems WCDMA/UMTS and CDMA2000 are described along with how these systems can allow 50 to 100 users to simultaneously share each radio channel and how they can offer many new types of services. The types of services that mobile telephone systems can offer vary depending on the technologies, devices and system types. Discover the key types of mobile services including circuit switched voice services, push to talk (dispatch) services, messaging, data services, location based services, multicast services. Learn how the new mobile telephone systems can offer services with different quality levels of service. Some of the most important topics featured are: . The Functional Parts of Mobile Systems . Basic Speech Coding, Access Methods and Modulation Types . Mobile Device Types . Basic Mobile Network Operation . AMPS, TACS, NMT, MCS, CNET and MATS-E 1G Systems . GSM, IS-136 TDMA and CDMA 2G Systems. . GPRS, EDGE, EVDO and EVDV 2.5G Systems . WCDMA/UMTS and CDMA2000 3G Systems . Basic 4G Requirements . Voice, Dispatch, Data, Location, Multicast and Variable QoS Services

作者介绍:

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