

**THE
CELLULAR
RADIO
HANDBOOK**

THE CELLULAR RADIO HANDBOOK

**A Reference for
Cellular System Operation**

Fourth Edition

NEIL J. BOUCHER



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PREFACE TO THE FOURTH EDITION

The first edition of *The Cellular Radio Handbook* was released in mid-1980, at a time when all commercial systems were analog. It soon became an industry reference, and was well-accepted. The second edition, which was released in June 1992, had little mention of digital systems because implementation was running late and no substantial networks existed.

The third edition was released in January 1995 when a large number of GSM systems were installed, but most were still having teething problems. By 2000, the GSM systems have gone on to become dominant, with CDMA offering a strong, but belated challenge.

The new edition is written from the perspective of a digital world, and covers the new technologies that are shaping the future of the industry. The original format has proven to be successful and is maintained. The intention is to present in a concise manner, good engineering practices, and sufficient theory to enable an understanding at a professional level. Mathematics has been used sparingly, but some topics require more extensive mathematical treatment. Where possible, these more technical sections have been dealt with in separate

chapters and can be by-passed without any real loss of continuity.

Many people have assisted me with the preparation of this work, but I would like to extend a special thanks to the following people:

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*Maleny, Australia
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He is fluent in a number of computer languages and has produced a Windows software suite for cellular on mobile engineering, which encompasses most of the traffic, RF and power engineering that a cellular engineer is likely to encounter. In all, there are more than

100 routines. This package is sold commercially and is available through the author.

Mr. Boucher is the author of a number of other technical books on mobile communications including *The Trunked Radio and Enhanced PMR Radio Handbook* and the *Paging Technology Handbook*, both published by John Wiley & Sons, Inc. He has written dozens of technical papers for various trade publications.

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