



electronics



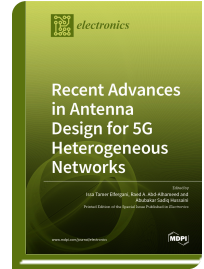
Special Issue Reprint

Recent Advances in Antenna Design for 5G Heterogeneous Networks

www.mdpi.com/books/reprint/4905

Edited by
Issa Tamer Elfergani
Raed A Abd-Alhameed
Abubakar Sadiq Hussaini

ISBN 978-3-0365-2964-6 (Hardback)
ISBN 978-3-0365-2965-3 (PDF)



The aim of this book is to highlight up to date exploited technologies and approaches in terms of antenna designs and requirements. In this regard, this book targets a broad range of subjects, including the microstrip antenna and the dipole and printed monopole antenna. The varieties of antenna designs, along with several different approaches to improve their overall performance, have given this book a great value, in which makes this book is deemed as a good reference for practicing engineers and under/postgraduate students working in this field. The key technology trends in antenna design as part of the mobile communication evolution have mainly focused on multiband, wideband, and MIMO antennas, and all have been clearly presented, studied and implemented within this book. The forthcoming 5G systems consider a truly mobile multimedia platform that constitutes a converged networking arena that not only includes legacy heterogeneous mobile networks but advanced radio interfaces and the possibility to operate at mm wave frequencies to capitalize on the large swathes of available bandwidth. This provides the impetus for a new breed of antenna design that, in principle, should be multimode in nature, energy efficient, and, above all, able to operate at the mm wave band, placing new design drivers on the antenna design. Thus, this book proposes to investigate advanced 5G antennas for heterogeneous applications that can operate in the range of 5G spectrums and to meet the essential requirements of 5G systems such as low latency, large bandwidth, and high gains



Order Your Print Copy
You can order print copies at
www.mdpi.com/books/reprint/4905

MDPI Books offers quality open access book publishing to promote the exchange of ideas and knowledge in a globalized world. MDPI Books encompasses all the benefits of open access – high availability and visibility, as well as wide and rapid dissemination. With MDPI Books, you can complement the digital version of your work with a high quality printed counterpart.



Open Access

Your scholarly work is accessible worldwide without any restrictions. All authors retain the copyright for their work distributed under the terms of the Creative Commons Attribution License.



Author Focus

Authors and editors profit from MDPI's over two decades of experience in open access publishing, our customized personal support throughout the entire publication process, and competitive processing charges as well as unique contributor discounts on book purchases.



High Quality & Rapid Publication

MDPI ensures a thorough review for all published items and provides a fast publication procedure. State-of-the-art research and time-sensitive topics are released with a minimum amount of delay.



High Visibility

Due to our global network and well-known channel partners, we ensure maximum visibility and broad dissemination. Title information of books is sent to international indexing databases and archives, such as the Directory of Open Access Books (DOAB), and the Verzeichnis Lieferbarer Bücher (VLB).



Print on Demand and Multiple Formats

MDPI Books are available for purchase and to read online at any time. Our print-on-demand service offers a sustainable, cost-effective and fast way to publish MDPI Books printed versions.