Compact Ku Band Transmitter Design For Satellite Communication Applications

From System Analysis To Hardware Implementation

This book introduces systematic design methods for passive

and active RF circuits and techniques, including state-of-the-art digital enhancement techniques. As the very first book dedicated to multiband RF circuits and techniques, this work provides an overview of the

evolution of transmitter architecture and discusses current digital predistortion techniques. Readers will find a collection of novel research ideas and new architectures in concurrent multiband power dividers, power amplifiers and

related digital enhancement techniques. This book will be of great interest to academic researchers, R&D engineers, wireless transmitter and protocol designers, as well as graduate students who wish to learn the core architectures, principles and

methods of multiband RF circuits and techniques.

Orbital Operations Study. Volume 2: Interfacing Activities Analyses. Part 3: Data Management Activity Group

McGraw-Hill Yearbook of Science and Technology

Forthcoming Books

NASA Conference Publication

January 7-11, 1996, Albuquerque, NM ...

Advances in Electronic Packaging

Networking Infrastructure for Pervasive Computing: Enabling Technologies & Systems is a comprehensive guide to tomorrow's world of

ubiquitous computing where users can access and manipulate information from everywhere at all times. The emphasis is on networking, systems and standards rather than detailed physical implementation. Addressed are many technical obstacles, such as, connectivity, levels of service, performance,

and reliability and fairness. The authors also describe the existing enabling off-the-shelf technologies and its underlying infrastructure known as pervasive networking (PervNet). PervNet ties different sets of smart nodes together enabling them to communicate with each other to provide pervasive computing

services to users. Throughout the book, important issues related to scalability, transparency, security, energy management, QoS provisioning, fault tolerance, and disconnected operations are discussed. This work provides a research and development perspective to the field of PervNet and will serve as an

essential reference for network designers, operators and developers.

From System Analysis To Hardware Implementation

Electro-technology

1990 IEEE MTT-S International Microwave Symposium Digest

Enabling Technologies and Systems

IEICE Transactions on

Electronics
June 2-4, 1986, Convention Center, Baltimore, Maryland

This collection of essays covers topics such as: SATCOM license and frequency and regulatory issues and policy developments for global connectivity;

applications for switched bandwidth systems; advanced mobile SATCOM; and intersatellite communications links for high data rates and interoperability.

IAF92-0791 - IAF92-0845

Digest of Technical Papers

Japanese Technical Abstracts

The sciences and engineering. B

Proceedings of the ... Joint ASME/JSME Conference on Electronic Packaging

Digital Wireless Communication

RF and Microwave

Transmitter Design is unique in its coverage of both historical transmitter design and cutting edge technologies. This text explores the results of well-known and new theoretical analyses, while informing readers of modern radio transmitters' pracitcal designs and their components.

Jam-packed with information, this book broadcasts and streamlines the author's considerable experience in RF and microwave design and development.

Bridging the Missing Link

Microwave Journal

American Book Publishing Record

Space

Communications Electronic Design Radar Processing, Technology, and Applications

This volume reviews approaches to and topologies of Ku-band transmitters. It explores

the advantages and disadvantages of these transmitters along with critical design criteria necessary to enhance system performance.

Readers will learn to analyze, design and characterize transceiver modules. 1986 IEEE MTT-S International Microwave Symposium

Digest Networking Infrastructure for Pervasive Computing May, 8-10, 1990, Dallas Convention Center, Dallas, Texas 1976 IEEE International

Solid-State Circuits Conference IEEE Antennas and Propagation Society International Symposium 1997 Speakers' Papers : World Telecommunicat

ion Forum, Special Session : Africa Telecom 86 : Nairobi, Kenya, 16-19 September 1986

This research focuses on the design and analysis of on-chip phased-array receivers

and transmitters in silicon technologies. Passive phase shifters have been widely used in conventional discrete implementations of phased-arrays which are based on transmit/receive modules in III-V

technologies. However their large volume and high loss impose several challenging issues for on-chip integration. To leverage system optimizations of on-chip phased-arrays, active phase shifter

architecture is primarily investigated in this dissertation. The active phase shifter utilizes a quadrature signal interpolation where the I/Q signals are added with appropriate

amplitude and polarity to synthesize the required phase. The quadrature signal generator is a key element for accurate multi-bit phase states in the active phase shifter. To generate lossless

wideband quadrature signals, a novel I/Q signal generator based on second-order L-C series resonance is developed. Active phase shifters with 4-bit and 5-bit control are then designed in

0.13-um and 0.18-um CMOS technologies and tested successfully for 6-26 GHz phased-arrays applications, featuring the smallest chip size ever reported at these frequencies with

similar phase resolutions. After successful demonstration of the active phase shifters, an eight-element phased-array receiver is developed in 0.18-um SiGe BiCMOS technology for X- and Ku-band

satellite communications. The phased-array receiver adopts corporate-feed architecture implemented with active signal combiners. The phased-array receiver is rigorously characterized including channe

I-to-channel mismatches and signal coupling errors from different channels. The on-chip phased-array designs are then extended to millimeter-wave frequencies. A four-element phased-array

receiver and a sixteen-element phased-array transmitter are designed using the SiGe BiCMOS technology and tested successfully for Q-band applications. Wilkinson couplers are compactly

integrated for linear coherent signal combining in the Q-band phased-array receiver. Also in the Q-band transmitter array, passive Tee-junction power dividers are integrated as a linear signal feed

network. The power divider is based on a coaxial-type shielded transmission line utilizing t hree-dimensional metal stack, which leads to a compact corporate-feed network suitable for large on-

chip arrays. The sixteen-element phased-array transmitter marks the highest integration of phased-array elements known to-date, proving a good scalability to a large array of the proposed

phased-array architecture. Also, each phased-array design integrates all digital control units and presents the first demonstration of on-chip silicon phased-array at the

corresponding design frequency, solving one of key barriers for low-cost and complex phased-arrays.

RF and Microwave Transmitter Design

A Collection of Technical Papers

The Magazine of

Broadcast Manage ment/engineering

13th AIAA International Communication Satellite Systems Conference and Exhibit, Los Angeles, CA, March 11-15, 1990

Dissertation Abstracts

International Proceedings