



DIGITAL SIGNAL PROCESSING FOR HIGH-SPEED OPTICAL COMMUNICATION

By

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ISBN 9780000988584 Extent: 276pp, PB Pub Date: 2020 Price: Rs. 1095

Feel Books Pvt. Ltd. 4381/4 Ansari Road Daryaganj New Delhi 110002 Tel: +91 11 47472600

ABOUT THE BOOK

There is an increasing tendency to integrate optical communication with wireless communication to satisfy continuously emerging (new) data communication demands. Thus, optical-wireless-integrated access networks and transmission systems, as well as LED-based visible light communication are attracting ever increasing research interest. Digital signal processing (DSP) is one new technology for optical transmission. As such this book is designed to pave the way to the better understanding of the deployment of DSP in optical fiber communication systems.

Digital Signal Processing for High-Speed Optical Communication covers a wide area of DSP topics in optical communications, and describes state-of-the-art digital signal processing techniques for high-speed optical communication. In this book, numerous advanced digital signal processing techniques aiming at the promotion of the capacity increase and performance improvement of optical or optical-wireless communication systems and networks are presented and explained. Coverage includes new technologies, optical filter with MLSE, and new pre-coding and pre-equalization applicable to single-carrier and multicarrier, direct-detection and coherent-detection optical commutation systems and networks.

READERSHIP

Graduate students, researchers and professionals dealing with Digital Signal Processing in optical fiber communication.

CONTENTS

- Digital Signal Processing for Optical Coherent Long-Haul Transmission System
- Advanced DSP for Super-Nyquist Transmission System
- Advanced DSP for Short-Haul and Access Network
- DSP for Direct-Detection OFDM System
- DFT-Spread for OFDM Based on Coherent Detection
- Digital Signal Processing for Dual/Quad Subcarrier OFDM Coherent Detection
- DSP for MIMO OFDM Signal
- DSP Implementation in OFDM Signal Systems
- Advanced DSP for Free-Space Optical Communication
- DSP Precoding for Photonic Vector Signal Generation

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