Contents :

Part II – Networking Protocols

Chapter 6. Networking Protocols and Services

- TCP/IP architecture
- Routing protocols
- MPLS
- Quality of Service (QoS)
- Resilient Packet Rings (RPR)

Part III – VLSI Chips

Chapter 7. VLSI Integrated Circuits

- Integrated circuit technologies
- CMOS and VLSI
- Networking chip architectures
- Network processors
- Design methodologies

Chapter 8. Circuits for Optical-to-Electrical Conversion

- Optical transceivers
- Signal amplification
- Phase-locked loops (PLL)
- Clock synthesis and recovery
- Equalization techniques

Part IV – Data Switching

Chapter 9. Physical Circuit Switching

- Switching architectures
- Crossbar switches
- Optical switching
- Multistage switching fabrics
- Quality of Service

Chapter 10. Time-Division-Multiplexed Switching

- TDM fundamentals
- TDM switch architectures
- Memory switches
- Multistage TDM fabrics

Chapter 11. Packet and Cell Switching and Queuing

- Packet-switching concepts
- Queue structures

- Buffer management
- Multicast switching
- Traffic handling

Part V – Networking Elements and Design

Chapter 12. Network Elements

- Networking functions
- Routers and switches
- Optical network equipment
- Network architecture components

Chapter 13. Network Design: Efficient, Survivable Networks

- Survivable network design
- Optical transport networks
- Automatically switched optical networks
- Reliability and redundancy
- Deployment strategies

Index

The book is organized into five major sections:

1. Optical transmission
2. Networking protocols
3. VLSI chips
4. Data switching
5. Networking elements and design