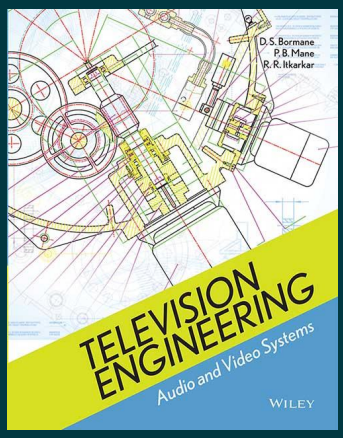
WILEY



Television Engineering: Audio and Video Systems

By D. S. Bormane, P.B. Mane, R.R. Itkarkar

Paperback 9788126556366 ₹999.00

Pages: 364

Description

Television Engineering: Audio and Video Systems explains the television engineering technology and focuses on providing latest information on it. The book includes new technologies such as Digital TV and Flat Screen Display. It explains the development in Audio and Video Technology, which includes Wi-Fi Audio / Video Transmitter and Receiver, HDTV Transmitter and Receiver, Mobile TV, IPTV, MP3 Player, Blu-ray DVD, etc.

About the Author

D. S. Bormane, P.B. Mane, R.R. Itkarkar

Dr. D. S. Bormane is currently Principal and Professor in the Department of Electronics and Telecommunication

Table of Contents

Preface

1. Introduction

1.1 History

1.2 TV Broadcasting History

1.3 Modern Trends in TV

2. Fundamentals of Television System

2.1 Introduction

2.2 Basics of Sound and Picture

2.3 Color Television Signal Transmission

2.4 Camera Tubes

2.5 Characteristics of Human Eye

2.6 Resolution

2.7 Brightness

2.8 Persistence of Vision

2.9 Flicker

2.10 Aspect Ratio

2.11 Vertical Resolution

2.12 Kell Factor

2.13 Horizontal Resolution
2.14 Scanning
2.15 Vertical Trace and Retrace
3. Composite Video Signal
3.1 Introduction
3.2 Composite Video Signal
3.3 Horizontal Blanking Pulse
3.4 Vertical Blanking Pulse
3.5 Summary of Composite Video Signal
3.6 Composite Video Signal Characteristics
4. Television Signal Bandwidth and Transmission
4.1 Introduction
4.2 TV Signal Transmission and Modulation
4.3 Vestigial Sideband Transmission
4.4 Amplitude Correction
4.5 TV Channel Bandwidth
4.6 TV Broadcast Bands and Channels
5. Television Standards
5.1 Introduction
5.2 CCIR Standard
5.3 National Television Standards Committee
5.4 Phase Alternate Lines
5.5 SECAM (Sequence Couleur à Mémoire)
5.6 SECAM on PAL
5.7 Advanced Television Systems Committee (ATSC)
5.8 Comparison between NTSC, PAL and SECAM Systems
6. Monochrome Television Receiver
6.1 Introduction
6.2 Block Diagram of Monochrome Receiver
6.3 Monochrome TV Receiver Controls
6.4 Use of ICs in a TV Receiver
7. Television Cameras
7.1 Introduction
7.2 Principle Working of TV Camera
7.3 Characteristics of Camera Tubes
7.4 Image Orthicon
7.5 Vidicon
7.6 Plumbicon Camera Tube

7.7 Silicon Diode Array Vidicon/Silicon Vidicon
7.8 Saticon Camera Tube
7.9 Newvicon Camera Tube
7.10 Chalnicon Camera Tube
7.11 Charge-Coupled Device (CCD) Cameras
7.12 Comparison of Camera Tubes
7.13 Generation and Video Processing of Camera Pick-Up Signals
8. Picture Tubes
8.1 Introduction
8.2 Basics for Generation of Electron Beam in a CRT
8.3 Monochrome Picture Tube
8.4 Color Picture Tubes
9. Essentials of Color Television
9.1 Introduction
9.2 Basic Block Diagram of Color TV
9.3 Transmission of Color TV Signals
9.4 Color Fundamentals
9.5 Color TV Signals
9.6 Quadrature Amplitude Modulation
9.7 Frequency Interleaving
10. Color Television Receivers and Systems
10.1 Introduction
10.2 Color TV Receiver Block Diagram
10.3 NTSC System
10.4 SECAM System
10.5 PAL System
11. Television Antenna and Propagation
11.1 Introduction
11.2 Half-Wave Dipole
11.3 Resonant Antenna
11.4 Basics of Antenna
11.5 Folded Dipole Antenna
11.6 Parasitic Elements
11.7 Transmitting Antenna
11.8 Receiving Antenna
11.9 Antenna Feeders
11.10 Antenna Impedance Matching
11.11 Balanced-to-Unbalanced (Balun) Transformer

11.12 TV Propagation
11.13 Reception Problems and Their Solution
12. Studio Equipment and Testing Equipment
12.1 Introduction
12.2 Studio Equipment
12.3 Telecine
12.4 Testing Equipment
12.5 Pattern Generator
12.6 Testing of the TV Receiver
13. Sound Recording and Reproduction
13.1 Introduction
13.2 Characteristics of Sound
13.3 Block Diagram of Disc Recording System
13.4 Principle of Disc Recording
13.5 Production of Disc Records
13.6 Types of Grooves
13.7 Disc Reproduction System
13.8 Playback Needles
13.9 Pick-Up Cartridge
13.10 Equalization in Recording/Playback System
13.11 Magnet Recording and Reproduction
13.12 Block Diagram of Tape Recording and Playback System
13.13 Recorded Wavelength, Gap Width, and Tape Speed
13.14 Cassette Tape and Tape Material
13.15 Dolby A and B Systems
13.16 Optical Recording of Sound
13.17 DVD Player
13.18 Advanced Audio Systems
13.19 Summary of Optical Generations
14. Fundamentals of Acoustics
14.1 Introduction
14.2 Acoustics
14.3 Reverberation
14.4 Acoustical Design Parameters
14.5 Audio Amplifiers
14.6 Voltage Amplifier Circuit
14.7 Power Amplifier Circuit
14.8 Negative Feedback in an Amplifier

14.9 Controls in Audio Amplifiers
14.10 Graphic Equalizer
14.11 Hi-Fi System
14.12 Difference between Stereophony and Monophony
14.13 Ideal and Practical Stereophonic System
14.14 Quadraphonic Sound System
14.15 Hi-Fi Playback System
14.16 Stereo Controls
14.17 PA System
14.18 Microphones
14.19 Loudspeaker
15. Digital TV and Display Devices
15.1 Introduction
15.2 Advantages of Digital Transmission
15.3 Digital TV Broadcasting System
15.4 Transmission of Digital Signal
15.5 MAC Signal and D2-MAC/Packet Signal
15.6 MAC Encoding and Decoding
15.7 Advantages of MAC Signal
15.8 Advanced MAC Signal Transmission: D2-MAC Signal
15.9 Digital Video and Audio Compression
15.10 Flat Display Devices
16. Digital TV Standards
16.1 Introduction
16.2 International System for Digital Television (ISDTV)
16.3 DTT Multimedia Broadcasting (DTMB)
17. HDTV and Advanced TV Systems
17.1 Introduction
17.2 HDTV Standards and Systems
17.3 HDTV Transmitter
17.4 HDTV Receiver
17.5 HDTV Standards of Wide-Dimension HDTV
17.6 MUSE (Multiple Sub-Nyquist Encoding) System
17.7 IP Audio and Video
17.8 IPTV Systems
17.9 Mobile TV
17.10 Wi-Fi Audio/Video Transmitters and Receivers
17.11 Video Projectors

17.12 HD Video Projectors

17.13 Video Intercom Systems/Video Door Phones

17.14 Cable Television

17.15 VCR

17.16 Direct to Home (DTH)

Annexure 1. Channel Allocation of Television Broadcasting in India

A1.1 Allocation of TV Channels to Indian Station(Courtesy: Doordarshan)

A1.2 Different Digital TV Delivery Platforms in India(Courtesy: Doordarshan)

A1.3 Spectrum for Digital TV Broadcasting (Courtesy: Doordarshan)

A1.4 Transmission of Several Programs from One Transponder / Transmitter

A1.5 Doordarshan’s DVB-H Transmission (Courtesy: Doordarshan)

Annexure 2. Alignment and Servicing of TV Receiver

A2.1 Alignment of TV Receiver

A2.2 Alignment of Black and White TV Receiver

A2.3 Alignment of a Color TV Receiver

Annexure 3. Composite Video Signal and Color TV receiver

A3.1 Practical Waveforms for Composite Video Signal

A3.2 Color TV Circuit

Index

To purchase this product, please visit:
https://www.wileyindia.com/television-engineering-audio-and-video-systems.html

Scan to buy