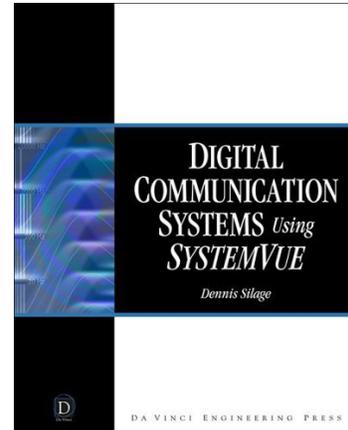


Digital Communication Systems Using *SystemVue*

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Da Vinci Engineering Press
Thomson Delmar Publishing
350 pages with CD-ROM



For more information and a series of focused hands-on digital communication exercises in Amateur Radio see:

<http://astro.temple.edu/~silage/Hands-OnDigiComm.htm>

KEY FEATURES

- A complete description of the *SystemVue* simulation environment
- Describes the analysis and design of modern digital communication systems with noise and non-linearities using simulation models without analytical equations
- Simulation results are used to illustrate and validate the concepts of digital communications with the complete development of the correlation receiver in AWGN and the power spectral density and bandwidth of modulated signals
- Provides a translation of digital communication system block diagrams, a common occurrence in textbooks, to the *SystemVue* simulation environment with a complete description of the parameters
- Facilitates the what-ifs of digital communication system design by rapidly changing simulation parameters
- Includes a CD-ROM of the simulation models, audio .wav files, and the *SystemVue Textbook Edition* software

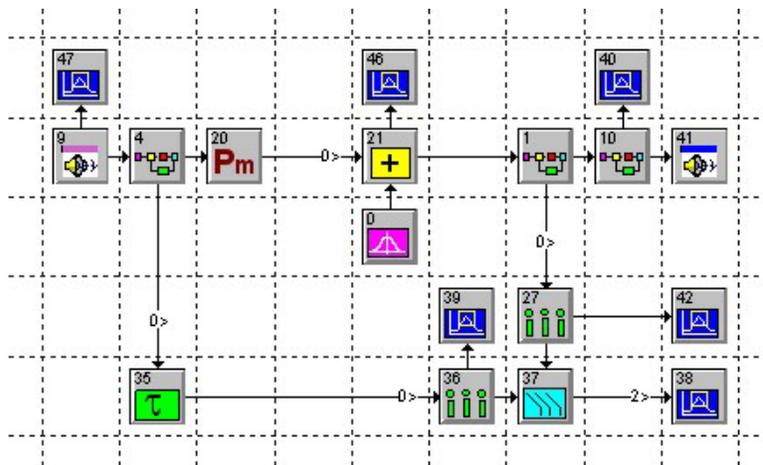


TABLE OF CONTENTS

Chapter 1: Communication simulation techniques, *SystemVue* token libraries and displays, simulation of analog DSB-AM and FM systems

Chapter 2: Baseband modulation and demodulation, binary and M-ary PAM, partial response signaling, optimum receiver in AWGN, BER, delta modulation, eye diagrams

Chapter 3: Bandpass modulation and demodulation, binary and M-ary ASK, FSK and PSK, QAM, DPSK, DQPSK, coherent and noncoherent demodulation in AWGN, BER, constellation plots

Chapter 4: Carrier frequency and phase synchronization, symbol synchronization, PLL, channel equalization and models

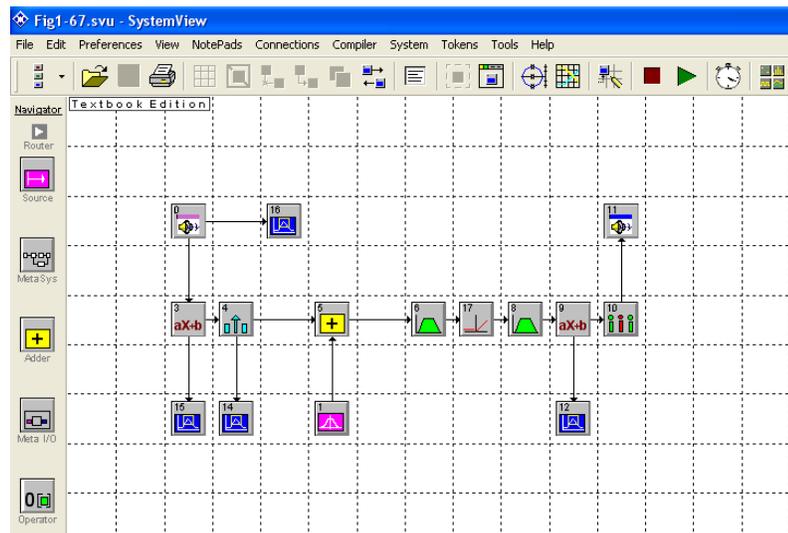
Chapter 5: Time, frequency and code division multiplexing, DSSS, FHSS, OFDM

Chapter 6: Sampling and quantization of baseband and bandpass signals, companding, PCM, DPCM, line codes

Bibliography About the CD-ROM Index

Crystal radio
simulation with audio
file input and output
in *SystemVue*

AUTHOR BIOGRAPHY



Dennis Silage is a Professor in the Department of Electrical and Computer Engineering at Temple University. He has a Ph.D. in Electrical Engineering from the University of Pennsylvania, is a Senior Member of the IEEE and director of the System Chip Design Center (www.temple.edu/scdc), which researches the application of programmable gate arrays in digital signal processing and digital communication. He has published over 70 articles on signal and image processing and computational communications. He holds Amateur Radio license K3DS, a Life Member of the ARRL, former EPA Technical Coordinator, former Assistant Director of the Atlantic Division, recipient of the 2001 Atlantic Division Technical Achievement Award and is the trustee of the Temple University ARC K3TU: www.temple.edu/k3tu