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Nota di contenuto	Front Cover; Digital Signal Processing System-Level Design Using LabVIEW TM; Copyright Page; Contents; Preface; What's on the CD-ROM?; Chapter 1. Introduction; 1.1 Digital Signal Processing Hands-On Lab Courses; 1.2 Organization; 1.3 Software Installation; 1.4 Updates; 1.5 Bibliography; Chapter 2. LabVIEW Programming Environment; 2.1 Virtual Instruments (VIs); 2.2 Graphical Environment; 2.3 Building a Front Panel; 2.4 Building a Block Diagram; 2.5 Grouping Data: Array and Cluster; 2.6 Debugging and Profiling VIs; 2.7 Bibliography; Lab 1: Getting Familiar with LabVIEW: Part I L1.1 Building a Simple VIL1.2 Using Structures and SubVIs; L1.3 Create an Array with Indexing; L1.4 Debugging VIs: Probe Tool; L1.5 Bibliography; Lab 2: Getting Familiar with LabVIEW: Part II; L2.1 Building a System VI with Express VIs; L2.2 Building a System with Regular VIs; L2.3 Profile VI; L2.4 Bibliography; Chapter 3. Analog-to-Digital Signal Conversion; 3.1 Sampling; 3.2 Quantization; 3.3 Signal Reconstruction; Lab 3: Sampling, Quantization and Reconstruction; L3.1 Aliasing; L3.2 Fast Fourier Transform; L3.3 Quantization; L3.4 Signal Reconstruction; L3.5 Bibliography Chapter 4. Digital Filtering 4.1 Digital Filtering; 4.2 LabVIEW Digital Filter Design Toolkit; 4.3 Bibliography; Lab 4: FIR/IIR Filtering System Design; L4.1 FIR Filtering System; L4.2 IIR Filtering System; L4.3

Building a Filtering System Using Filter Coefficients; L4.4 Filter Design Without Using DFD Toolkit; L4.5 Bibliography; Chapter 5. Fixed-Point versus Floating-Point; 5.1 Q-format Number Representation; 5.2 Finite Word Length Effects; 5.3 Floating-Point Number Representation; 5.4 Overflow and Scaling; 5.5 Data Types in LabVIEW; 5.6 Bibliography; Lab 5: Data Type and Scaling
L5.1 Handling Data types in LabVIEW L5.2 Overflow Handling; L5.3 Scaling Approach; L5.4 Digital Filtering in Fixed-Point Format; L5.5 Bibliography; Chapter 6. Adaptive Filtering; 6.1 System Identification; 6.2 Noise Cancellation; 6.3 Bibliography; Lab 6: Adaptive Filtering Systems; L6.1 System Identification; L6.2 Noise Cancellation; L6.3 Bibliography; Chapter 7. Frequency Domain Processing; 7.1 Discrete Fourier Transform (DFT) and Fast Fourier Transform (FFT); 7.2 Short-Time Fourier Transform (STFT); 7.3 Discrete Wavelet Transform (DWT); 7.4 Signal Processing Toolset; 7.5 Bibliography
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Lab 9: DSP Integration Examples

Sommario/riassunto

LabVIEW (Laboratory Virtual Instrumentation Engineering Workbench) developed by National Instruments is a graphical programming environment. Its ease of use allows engineers and students to streamline the creation of code visually, leaving time traditionally spent on debugging for true comprehension of DSP. This book is perfect for practicing engineers, as well as hardware and software technical managers who are familiar with DSP and are involved in system-level design. With this text, authors Kehtarnavaz and Kim have also provided a valuable resource for students in conventional engine