

1. Record Nr.	UNINA9910457070903321
Autore	Crecraft D. I
Titolo	Analog electronics [[electronic resource]] : circuits, systems and signal processing / / D.I. Crecraft
Pubbl/distr/stampa	Oxford, : Butterworth-Heinemann, 2002
ISBN	1-281-05144-6 9786611051440 0-08-047583-3
Descrizione fisica	1 online resource (437 p.)
Altri autori (Persone)	GergelyS
Disciplina	621.3815
Soggetti	Analog electronic systems Signal processing Electronic books.
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index.
Nota di contenuto	Front Cover; Analog Electronics: Circuits, Systems and Signal Processing; Copyright Page; Contents; Preface; Chapter 1. Introduction to electronic systems; 1.1 The roles of analog electronics and digital electronics; 1.2 Hi-fi and music amplifiers; 1.3 Video cameras and displays; 1.4 Multimedia; 1.5 Medical instrumentation; 1.6 Industrial instrumentation; 1.7 Telecommunications; 1.8 Mixed-signal i.c. chips; 1.9 Power supplies; 1.10 Signal processing; 1.11 Summary: the roles of analog electronics; Chapter 2. Signals and signal processing; 2.1 Introduction: signals and systems; 2.2 Systems 2.3 Signals2.4 Simple RLC networks; 2.5 The decibel and Bode plots; 2.6 Step and pulse response; 2.7 Waveforms and frequency spectra; 2.8 Random signals and noise; References; Chapter 3. Amplifiers and feedback; 3.1 Gain and decibels; 3.2 Frequency response; 3.3 Input impedance and output impedance; 3.4 Operational amplifiers ('op amps'); 3.5 Negative feedback and the op amp voltage follower; 3.6 An op amp non-inverting amplifier; 3.7 Negative and positive feedback: stability; 3.8 An op amp inverting amplifier; 3.9 Offsets; 3.10 Noise in amplifiers; References Chapter 4. Signal processing with operational amplifiers4.1

Introduction; 4.2 Instrumentation amplifiers; 4.3 Inverting summing amplifiers; 4.4 Non-inverting summing amplifiers; 4.5 Integrators; 4.6 Charge amplifiers; 4.7 Precision rectifiers; References; Chapter 5. Diode and transistor circuits; 5.1 Semiconductor diodes; 5.2 Diode characteristics; 5.3 Bipolar junction transistors (BJTs); 5.4 Bipolar junction transistor parameters and amplifiers; 5.5 Field-effect transistors (FETs); References; Chapter 6. Design of operation amplifiers ('op amps'); 6.1 Structure of the op amp 6.2 The differential-pair input stage 6.3 The second stage and the output stage; 6.4 The constant-current sources; 6.5 Common-mode rejection ratio (CMRR); 6.6 Frequency response; 6.7 Slew rate; 6.8 Integrated-circuit op amps; 6.9 Radio-frequency (r.f.) op amps; 6.10 Video amplifiers; References; Chapter 7. Analog-to-digital and digital-to-analog conversion; 7.1 Introduction; 7.2 Quantization; 7.3 Sampling; 7.4 Analog-to-digital conversion; 7.5 Analog-to-digital converters; 7.6 Digital-to-analog converters; 7.7 Errors in A-D and D-A converters; References
Chapter 8. Audio-frequency power amplifiers 8.1 Requirements; 8.2 Total harmonic distortion (THD) and Fourier analysis; 8.3 Power amplifier architecture; 8.4 Output stages: the double emitter-follower; 8.5 Output stages with compound transistors ('super- β ' pairs); 8.6 FET output stages; References; Chapter 9. Radio communication techniques; 9.1 Radio communication systems; 9.2 Turned r.f. amplifiers; 9.3 Amplitude modulation (AM) and demodulation; 9.4 Frequency modulation (FM) and demodulation; 9.5 Digital modulation schemes; 9.6 Receivers; References; Chapter 10. Filters; 10.1 Introduction
10.2 A simple LCR filter

Sommario/riassunto

The content has been carefully designed to meet the requirements of first and second year students of electronic engineering, communications engineering and telecommunications, following full honours degree programs or two-year courses including HNC/HND. A companion website includes interactive spreadsheets to download.*A completely new analog electronics textbook for the digital age*Coverage ideal for courses with a communications / wireless focus*Companion website provides interactive spreadsheets, where readers can put the book's theory into practice
