

CONTENTS, VOLUME 2

CONTRIBUTORS TO VOLUME 2

FORWORD

vii

1. Evaluation of Measurement

by SIDNEY REED

1.1. General Rules	1
1.2. Errors	2
1.3. Statistical Methods	3
1.4. Direct Measurements	5
1.5. Indirect Measurement	8
1.6. Preliminary Estimation	13
1.7. Errors of Computation	13

2. Passive Circuit Elements and Networks

by R. M. SCARLETT

2.1. Basic Network Principles and Terminology	17
2.2. Network Theory	24
2.3. Two-Terminal-Pair Networks; Filters	28
2.4. Distributed Constant Networks	37
2.5. Components	41
2.6. Construction and Wiring Techniques	45

3. Vacuum Tubes

by EDWARD J. CRAIG

3.1. Thermionic Emission	47
3.2. Diodes	52
3.3. Triodes	57
3.4. Multielement Tubes	62
3.5. Selection of Tubes	66

4. Gas Tubes

by W. J. KEARNS and R. P. WELLINGER

4.1. Gaseous Electronics and Devices	71
4.2. DC Breakdown	71

Plasma Characterist	98
Practical Gas Tubes	100
Tube Ratings: Definition	101
5. Semiconductor Circuit Elements	
by I. A. LESK	
Introduction	
Devices Employing Bulk Semiconductors	
Single-Junction Rectifier and Diodes	
4. Transistors (Bipolar)	142
5. Multiregion Devices	160
6. Other Transistors	167
Semiconductor Integrated Circuits	
Bibliography	
6. Rectifiers, Amplifiers, and Oscillators	
6.1. Rectifier Circuits	
by E. P. FATHERS' ONE	
6.2. Vacuum-Tube Amplifiers	
by E. P. FATHERS' ONE	
Transistor Oscillators	
by W. J. KEARNS and R. W. H. SCHLEIBNER and H. H. S.	101
6.3. Circuits	
W. J. KEARNS and R. W. H. SCHLEIBNER and H. H. S.	101
7. Nonlinear Circuits	
7.1. General Discussion	
by G. G. KELI	
7.2. Nonregenerative Circuits	
by G. G. KELI	
7.3. Regenerative Circuits	
by G. G. KELI	
7.4. Sweep Circuits	
by D. MAEDEF	
7.5. Transistor Switching Circuits	
by H. N. BROWN and F. H. S.	

CONTENTS.

8. Servomechanisms, Regulation and Feedback

8.1. General Principles	
by L. A. GOULD	
8.2. Electronic Regulation.	488
by E. F. BUCKLEY	
8.3. Servomechanisms.	511
by L. A. GOULD	

9. Measurements

9.1. Counting	519
by G. G. KELLEY	
9.2. Frequency Measurements.	535
by E. A. GOLDBERG	
9.3. Time Measurement.	543
by E. A. GOLDBERG	
9.4. Phase Measurements.	549
by T. F. HAGGAI	
9.5. Voltage, Current, and Charge	558
by J. A. STROTHER	
9.6. Pulse Amplitude Measurements	583
by D. MAEDER	
9.7. Magnetic Resonance	624
by J. TOWNSEND	
9.8. Computers	637
by P. E. RUSSELL	
9.9. Equipment Testing.	647
by D. MAEDER	
9.10. Telemetering	674
by J. F. KOUKOL	
9.11. Information-Theoretical Methods Applied to Telemetering	686
by E. SHOTLAND	

10. Microwaves

10.1. Definition of Microwaves	
by R. B. MUCHMORE	
10.2. Microwave Circuits.	705
by R. B. MUCHMORE	

10.3. Microwave Tubes	
by M. CHODOROW	
10.4. Detectors and Receivers for Microwaves	728
by R. B. MUCHMORE	
10.5. Microwave Measurements.	
by R. B. MUCHMORE	
11. Miscellaneous Electronic Devices	
11.1. Photoelectric Devices.	743
by R. W. ENGSTROM	
11.2. Cathode-Ray Devices.	765
11.2.1. Electron-Ray Indicator Tubes ("Magic Eye" Tubes)	765
by R. P. STONE	
11.2.2. Cathode-Ray Tubes	766
by R. P. STONE	
11.2.3. Camera Tubes	773
by R. G. NEUHAUSER	
11.2.4. Storage Tubes.	
by R. P. STONE	
11.3. Magnetic Amplifiers	785
by F. J. FRIEDLAENDER	
12. Noise In Electronic Devices	
by K. M. VAN VLIET	
12.1. Introduction.	795
12.2. Thermal Noise.	798
12.3. Shot Noise and Generation-Recombination Noise	801
12.4. Modulation Noise	806
12.5. Noise in Amplifiers.	808
AUTHOR INDEX	819
SUBJECT INDEX	