

Electronic Engineering

INDEX TO VOLUME 39, 1967

MORGAN-GRAMPIAN LIMITED
28 ESSEX STREET · STRAND · LONDON · W.C.2.

INDEX

JANUARY TO DECEMBER 1967

	Page
A	
Aerials, the design and adjustment of m.f. broadcasting, by P. Knight	6
Amplifier, A 50 to 500MHz broadband transistor, by A. E. Hilling	352
Amplifiers, analysis of feedback, by G. J. Pridham	436
Amplifiers combining bipolar and field-effect transistors, by W. Gosling	478
Amplifiers, design of low level d.c. chopper, by S. K. Bhola and R. H. Murphy	318
Amplifier design, v.h.f. solid-state power, by T. Spencer	72
Amplifier (s.d.a.) for nuclear reactors, new shutdown, by I. G. Morris (Part 1)	485
(Part 2)	553
Analogue multiplier, a simple high speed, by J. P. Wilson	11
Analysers for use in human electromyography, an, by P. Fitch	240
Antenna, backfire meander-line, by S. C. Loh and J. Jacobsen	575
Antenna, X-band omnidirectional double-slot-array, by T. Takeshima	617
Array of slots on the surface of a cylinder, directivity of, by J. Ricardi	578
Automation for the Tyne tunnel	309
Averager, electromechanical running, by K. C. Ng and K. K. Murthy	169
Averaging of heart-rate responses in rats following electrical brain stimulation, by W. J. Mundle	686
Aviation, electronics in	322

B	
Binary-coded-decimal circuit with gated feedback, an asynchronous, by S. L. Hurst	25
Bus services with computer checking of time-tables, planning a v.h.f., f.m. radio system for, by T. K. Tawfik	224
BOOK REVIEWS	48, 118, 188, 264, 330, 394, 460, 518, 650, 717, 784

Advanced electronic techniques: proceedings of the second Oxford electronics lecture course	520
Advances in microwaves, volume 1	519
Volume 2	717
American microelectronics data	119
Analysis and synthesis of tunnel diode circuits	330
Analysis of discrete physical systems	394
Antenna theory and design, volume II, second edition	460
Anthology of Philips research 1891-1966	265
Automatic control systems explained	189
Automation and instrumentation	395
Basic automatic control theory	264
Basic electrical engineering: circuits, electronics, machines, control	719
Basic electricity for electronic engineers	395
Basic mathematics for electronics	395
Basic television: part I	719
Basic theory of waveguide junctions and introductory microwave network analysis	784
BBC handbook, 1967	265
Beiträge zur Analyse des dynamischen Verhaltens von Regelkreisen (papers relating to the analysis of the dynamic behaviour of control circuits)	331
Challenge of the computer utility	189
Circuit design for audio	717
Communication system engineering handbook	717
Comparative study of programming languages	719
Computer programming for science and engineering	49
Design and construction of electronic equipment	49
Dictionary of electronics	265
Dictionary of electro-technology, German-English	330
Differential and difference equations	394

Digest of literature on dielectrics, Vol. 29	331
Directory of electronic circuits	119
Economic computation and economic cybernetics studies and research	265
Eddy currents	331
Einführung in die Anwendung kontaktloser Schaltelemente (introduction to the applications of contactless switching elements)	520
Einführung in die Schaltalgebra (introduction to switching algebra)	785
Einfluss von Hochfrequenzüberlagerungen bei Stossspannungen auf das Durchschlagverhalten von Luft unter Atmosphärendruck bei verschiedenen Elektrodenanordnungen	718
Electric power systems	787
Electrical and electronic trader's year book 1967	331
Electrical conduction mechanisms in thin insulating films	189
Electrical noise	786
Electrical properties and applications of thin films	717
Electromagnetic shock waves	188
Electron dynamics of diode regions	784
Electronic automatic control devices	329
Electronic circuit analysis: volume 2—active networks	461
Electronic communications	395
Electronic computers made simple	395
Electronic counting: circuits, techniques devices	787
Electronic digital systems	48
Electronic engineering	118
Electronic inverters	718
Electronic laboratory instrument practice	395
Electronics and nucleonics dictionary	331
Electronic sensing devices	119
Electronics from theory into practice	265
Electronic testing	331
Electronic weighing and process control	520
Elementary electronics	518
Elements of energy conversion	651
Engineering sciences	652
Engineering science at the university	520
Fluctuations of stationary and non-stationary electron currents	189
Focusing of charged particles, Vol. 1	785
Fourth state of matter	119
Fundamental electronics	518
Fundamentals of digital machine computing	331
Fundamentals of electronics	651
Fundamentals of silicon-integrated-device technology, Vol. 1	786
Gas-lasers	718
Generalized electric machines	719
Handbook of basic transistor circuits and measurements	395
Handbook of electronic instruments and measurement techniques	719
High-frequency communication	719
History of the house of Siemens, Vol. I and II, 1914-45	331
Impedanzuntersuchungen an dielektrischen Flachantennen (study of the impedance of dielectric plane aerials)	265
Instruments, electronics, automation year book and buyers' guide	520
Integrated circuits	395
Introducere în Cibernetică Sistemelor Discrete (introduction to discrete systems cybernetics)	265
Introduction to computational linguistics	787
Introduction to cybernetics	519
Introduction to dynamic programming	265
Introduction to network analysis	785
Introduction to vector analysis for radio and electronic engineers	119
Ionization avalanches and breakdown	189
Laplace transforms for electronic engineers	119
Laplace transform theory and electrical transients	650
Laser light	650
Laser receivers	264
Lasers	650
Les machines électriques en automatique appliquée	461
Linear sequential circuits: analysis, synthesis and applications	652
List processing	787
Lithium-drifted germanium detectors—proceedings of panel, Vienna, 6-10 June 1966	331
Longitudinal space-charge waves	49
Low-noise electronics	718
Machine translation	520
Magnetism and magnetic materials 1966 digest	395
Magnetism in solids	518
Mathematical techniques in electronics and engineering analysis	787
Mathematics for radio and electronics technicians	331
Measuring methods and devices in electronics	49
Membranes—technology and economics	331
Microelectronics	520
Microwave breakdown in gases	650
Microwave valves	330
Modelle und Ersatzschaltungen von Halbleiterdioden (models and equivalent circuits of semiconductor diodes)	520

	Page
Music, physics and engineering	718
Nachrichtentechnik—eine einführende Darstellung	461
Nachrichteübertragung	460
Negative absolute temperatures	119
Optical properties of solids	331
Partial differential equations	385
Particle accelerators	385
Phase-lock techniques	119
Phasor diagrams	49
Physical fields	265
Physical laboratory handbook	49
Physical principles of magnetism	49
Physics of modern electronics	784
Plastic insulating materials	119
Principles of linear circuits	118
Proceedings of IFIP congress, 1965, New York City, May 24-29, Vol. 2	331
Programmierung von Datenverarbeitungsanlagen (programming of data information)	395
Progress in nuclear energy series: IX—analytical chemistry, volume 7	49
Publications of the National Bureau of Standards	719
Radio amateur's handbook	520
Radio and electronics components: vol. 1—fixed resistors	520
Radio relay systems	119
RCA receiving tube manual	331
Regulations for the electrical equipment of buildings	49
Reports on progress in physics, parts I and II	331
Safety for industry	787
Safety with cryogenic fluids	787
Semiconductor circuits: worked examples	265
Semiconductor devices	189
Semiconductor junction devices	785
Sequential-circuit synthesis: state assignment aspects	118
Short wave listening	49
Signale und Systeme (signals and systems)	394
Silicon and germanium power rectifier technology	49
Simple approach to electronic computers	331
Solutions d'exercices du cours élémentaire de mathématiques supérieures, tomes I à III de J. Quinet	787
Statistical communication and detection	786
Strahlungskopplung von Wendelantennen (radiation coupling of helical aerials)	265
System analysis by digital computer	188
Technical drawing	520
Techniques of pulse-code modulation in communication networks	652
Tehnika Frekventlor Foarte Inalte (v.h.f. techniques)	265
Telefonie La Mare Distanta (Long Distance Telephony)	265
Teleurope	119
Théorie et pratique des circuits à transistors	48
Theory and application of active devices	329
Theory of waveguides and cavities	784
Transduktorschaltungen (transducer circuits)	189
Transformers for electronic circuits	460
Transistor circuit, design and analysis	118
Transistor physics	264
Transistors for audiofrequency	520
Transistor specification and substitution handbook	265
Ultrasonic machining of intractable materials	265
Untersuchungen an dielektrischen Stielstrahlern über den Einfluss der Strahlungskopplung auf deren Fusspunktsimpedanz (the influence of the radiation coupling on the base impedance of dielectric rod radiators)	329
Untersuchungen über ebene Beugungsprobleme elektromagnetischer Wellen für rechteckigkeilförmige Gebiete (plane diffraction problems of electromagnetic waves in right-angled, wedge-shaped areas)	329
Wireless World diary 1968	787
Worked examples in modern physics, vol. I and II	520
Zur Frage der Verhütung von Kollisionen in der Binnenschifffahrt (aspects of collision prevention on inland waterways)	265

C

Cable for Cape Town-Lisbon submarine link, first	783
Calculus, open-limit, by C. G. Mayo and J. W. Head	696
Checking equipment for aircraft, automatic	243
Circuit synthesis, approach to applied, by R. H. Dadd	668
Circuits incorporating new coupling-loop configurations, all magnetic, by D. J. Morris	412
COMMENTARIES	1, 71, 141, 211, 279, 345, 411, 477, 535, 599, 667, 733
Compensating networks, a note on a.c., by D. R. Wilson	316
Cone of confusion, simulation of, by S. Dalal	78
Control for overhead travelling crane, radio	418
Conversion, example of digital-to-analogue, by W. Olthoff	763
Conversion, voltage-to-frequency, by B. D. Rakovich and S. Tesic	766
Converter, accurate current-to-frequency, by J. Korytkowski	568
Converter, accurate triangle-sine, by G. Klein and H. Hagenbeuk	700
Converter for low frequencies, accurate a.c.-d.c., by R. W. Gellie and A. G. Klein	484
Converters using linear ramps, time-amplitude and amplitude-time, by C. Riddle—Part 1	600
Part 2	711
Counter, a rapidly reversible 700kHz digital decade, by J. F. Brandwijk and P. H. Sydenham	298
Counter, train decade, by R. P. Ingram	759
Counter, transistorized 100MHz binary, by R. J. Hood	642
Current-driven source-follower, the parameters of the, by P. F. Ridler	290
Current-measuring transistor circuits, logarithmic, by K. Søe Højberg	20

D

Data logger scaler and alarm limit comparator, a, by R. J. S. Ruckman	177
Data service, an automation instrument	249
DATA SHEETS AND CATALOGUES	532, 662, 729
Decade boxes with binary output, by D. P. Franklin	152
Dekatron selectors with low-cost transistors, coupling, by J. F. Young	323
Delay lines, precision temperature-controlled environments for ultrasonic fused-quartz, by D. Howorth, C. R. Caine and L. T. E. Ward	706
Delay unit suitable for television-field delay, by D. Howorth and J. G. Ingleton	734
Detector for power measurements, a square-law, by J. F. Gilding	82
Digital-analogue convertor with reciprocal read-out, a simple, by L. Davison and R. Wilson	381
Digital coding equipment for recording field strength measurements, by D. G. Beadle and D. E. Susans	233
Domain originated functional integrated circuits	183
Drive circuits for a piezo-electrically driven mechanical vibrator, two terminal, by T. J. Stevenson	222

E

Electroluminescent panels for display of complex systems	435
Electrometer circuit, a junction transistor, by T. K. Cowell	362
Electronic sketch-pad	545
Esaki diode pair, comparator-hold circuit using the facing-coupled, by Y. Murata	356
Eurocontrol experimental centre, the	166
Extraction of signals from noise using digital techniques, by A. B. E. Ellis	546
ELECTRONIC EQUIPMENT	50, 120, 190, 266, 332, 396, 465, 524, 589, 656, 723, 790
Accelerometer	592, 659
Adders, integrated circuit	399
Amplifier, buffer	190
Amplifier, carrier frequency	338
Amplifier, chopper	792
Amplifier, chopper-stabilized operational	795
Amplifier, d.c.-coupled wideband power	658
Amplifier, differential operational	474
Amplifier, f.e.t.-input operational	727
Amplifier, integrated medium-power	659
Amplifier, integrated-circuit operational	794
Amplifier, low-drift high-speed operational	660
Amplifier, low-noise	793
Amplifier, operational	468
Amplifier, oscilloscope differential	194
Amplifier, plug-in differential	531
Amplifier, servo	270
Amplifiers, solid-state charge	726
Amplifier, transistorized charge	473
Amplifier, unity-gain	529
Analysers, high-frequency wave	465
Analysers, inductor	400
Analysers, servo	269
Attenuator, u.h.f. switched	333
Automatic gauging equipment	335
Balun transformer	794
Boards, circuit-development	656
Bridge and amplifier, d.c.	123
Bridge, automatic	473
Bridge, radio-frequency	659
Bridge supply and indicator, d.c.	402
Bridge units, single-phase full-wave	797
Cables, television-relay	528
Calibrator, portable v.h.f./u.h.f.	790
Camera, closed circuit television	470
Camera, new	524
Camera-viewfinder tube	655
Capacitance box	333
Capacitance boxes, decade	397
Capacitor box, binary	659
Capacitors, etched tantalum foil	268
Capacitors for printed-circuit boards	729
Capacitors, glass-dielectric trimmer	658
Capacitors, lead-through	792
Capacitors, miniature monolithic ceramic	724
Capacitor, miniature p.t.f.e. tubular	724
Capacitors, paper/polyester	55
Capacitors, polycarbonate	51
Capacitors, polyester-film	724
Capacitors, quartz trimmer	402
Capacitors, variable	336
Cathode-ray tubes, instrument	590
Clock, digital	193
Comparator, visual inspection	470
Computer, general purpose	334
Connector, mark 4 crimp	473
Connectors, board-to-board	726
Connectors, printed circuit edge	334, 656, 791
Controller, analogue	593
Controls, modular plug-in	402
Control system, logic	472
Converters, analogue/digital and digital/analogue	466
Converters, static	591
Cooling unit	194
Co-ordinate marking-out tables	401
Copper, gold inlaid beryllium	726
Counter, batch	266, 337
Counter, high speed c.t.l. decade	791
Counter, pre-set	269
Counter, 12.5MHz	400
Counters, digital	123, 336
Counter converters	727

	Page		Page
Counting units, integrated circuit	794	Oscilloscope, solid state	50
C.R.T. for multiple displays, small	472	Oscilloscope system, digital	526
Crystal units, glass	267	Oscilloscope tube, short	468
Data acquisition system	401	Oscilloscopes, 12.4GHz sampling	467
Datalink equipment	339	Pencil-follower ancillary equipment	53
Delay line	54	Phase analyser, digital	795
Delay line, broadband variable	468	Photocells, resistive	595
Delay line modules	338	Photosensitive semiconductors	661
Delay lines, multiple tapped	530	Plug and socket, multi-pole	53
Delay line, wire	728	Plugs and terminals, screwless	268
Detector, leak	339	Potentiometers	194
Detector, null	398, 655	Potentiometer, d.c.	267
Detector, vehicle	332	Potentiometer, miniature	50, 190, 471, 527
Digital d.c. voltmeter	51	Potentiometer, moulded-track	527
Diode assemblies, multiple	195	Potentiometer, preset	594
Diodes, electroluminescent	396	Potentiometers, plastic-film elements for precision	727
Diodes, encapsulated silicon	466	Potentiometer, slave unit	120
Diode, high-power silicon	592	Potentiometers, subminiature	52, 472
Diodes, v.h.f. tuner	469	Potentiometers, trimmer	400, 403
Diodes, zener	724	Potentiometer, wirewound	191, 339
Discriminator, differential	467	Power modules, compact i/c	529
Display, microminiature in-line digital	472	Powermeter, plug-in r.f.	727
Distortion meter, peak-reading	465	Power packs	591
E.H.T., compact packaged	655	Power supplies	193, 397, 525, 660
E.H.T. supply	194	Power supplies, encapsulated stabilized	593
Electroencephalograph, portable	466	Power supplies and voltage references, modular	526
Electronic-circuit kits	528	Power supplies, high-current d.c. stabilized	468
Encapsulant, silicone	531	Power supplies, high-voltage	792
Encoder, digital	396	Power supplies, stabilized	269, 338
Encoders, binary coded decimal	398	Power supply, compact h.v.	529
Environmental test chamber	466	Power supply, d.c.	337
F.E.T., n-channel	660	Power supply, dual	121
F.E.T. operational amplifier	591	Power supply, integrated-circuit	794
F.E.T. test set	121	Power supply, isolated	332
Filter, Coaxial bandpass	725	Power supply units	471, 796
Filter, module, tunable	531	Power unit, miniature	266
Filters, mechanical	191, 792	Pre-amplifier, high resolution	190
Flipflop toggles at 120MHz	796	Preselector, tracking	591
Flowmeters, blood	334	Probe, high-voltage	525
Frequency comparator	659	Programming boards	122
Frequency divider, microwave	271	Pump, gradient	398
Frequency doubler/phase shifter	725	Pumps, molecular sieve sorption	52
Frequency standard	530	Ratiometer	402
Fuse, thermal	532	Receiver, broadcast	724
Galvanometer-amplifier system	795	Recorder, automatic dewpoint	123
Galvanometer amplifier, 7-channel	594	Recorder, miniature potentiometric	524
Galvanometer, input-attenuator module	473	Recorder, multi-channel	122
Gauge, Pirani-Penning	337	Recorders, multi-point	121
Gauge, vacuum	195	Recorder, ultra-violet	399
Generators, function	729	Recording belts, magnetic	592
Generator, microwave signal	53	Rectifiers, miniature h.v. silicon	656
Generator, noise	792	Rectifiers, power	725
Generator, PAL pattern	266	Rectifiers, silicon	723
Generator, pulse	338	Regulator module, plug-in series	529
Generator, sub-standard frequency	267	Relay, fixed- or adjustable-time-delay	661
Generator, telegraph-signal	793	Relay, heavy duty	192
Glow lamps, subminiature	790	Relay, miniature	269, 273, 401, 526
HV-supply units	656	Relays, reed	399
Indicators, electroluminescent numerical	339	Relay, solid-state	526
Indicator, magnetic bearing	51	Relay, twin-contact general purpose	793
Indicator, miniature neon	594	Reperforator, printing	271
Indicator, transistorized	396	Resin adhesive/sealant, epoxy	661
Inductance bridge, transistorized	590	Resistance box	272
Infra-red source diodes	592	Resistance bridge	530
Instrumentation modules	528	Resistance standards, calibration	661
Inverter	333	Resistance wire, high-stability	795
Instruments, true r.m.s.	123	Resistor modules, miniature	338
Klystrons, m-band reflex	530	Resistors, carbon-film	193
Lamp, miniature indicator	273	Resistors, microminiature	54, 474
Laser equipment	54	Resistors, positive temperature coefficient	193
Lasers, gas	527	Resistors, precision variable	125
Lasers, r.f. excited gas	272	Resistor unit, switched	524
Limiters, high power v.h.f.	398	Scaler, reversible	470
Logic modules, plug-in	590	Scales, decimal digital	192
Magnetron, Ku-band pulse	728	Servopotentiometer, precision	724
Magnetron for linear accelerations	469	Shielding boxes, r.f.	52
Matrix board for computer memory	473	Signal-converter series	657
Meter, microwave peak-power	727	Single-trace unit for increased sensitivity	590
Meter unit	594	Sound-level calibrator	595
Microcircuit compositions, thick-film	595	Sound-level meter	657
Microphones, high intensity	191	Source, d.c. millivolt	468
Microswitch, thin	659	Source/detector, r.f.	55
Microvoltmeter for signals in noise	589	Strain bridge, direct reading	121
Microwave, miniaturized equipment	661	Strain gauge power supply and bridge balance unit	272
Milivoltmeter, v.h.f.	336	Strippers, thermal wire	530
Mixers, double-balanced	728	Suppressors, solid-state transient	658
Mixer, X-band	474	Switch, microwave	124, 334
Modular control package	725	Switch, multi-port coaxial	335
Modulator, solid-state	595	Switch, subminiature coaxial	471
Modules, thermo-electric generator	790	Switch, subminiature sealed press	596
Monitors, transistorized CCTV	471	Switches and relay units, magnetic reed	590
Monitor, film resistance	55	Switches, dry reed push-button and key	122
Monitors, current	125	Switches, rotary wafer	191
Motor, microminiature	400	Switching modules, static	270
Motor, miniature synchronous	54	Switching units, static	51
Motor protection units	55	Synthesizer, u.h.f. variable-frequency	465
Multi-meter	337	Tabulator key	591
Multimeter, digital	596	Tachogenerator, motor	793
Multiplexer, analogue	474	Tachometer, digital	266, 473
Multiplexer, d.c.	527	Tape, heads, instrumentation	272
Multivibrator, monolithic	529	Tape shuttle unit	190
Network-analyser system	531	Tape testing equipment	120
Noise measuring equipment, microwave	333	Tape winder, paper	271
Numerical indicator tubes	403	Telemetering system	273
Oscillator control, microwave sweep	532	Teletypewriter, electronic	793
Oscillator, Gunn effect	124	Television measuring instruments	728
Oscillator, micro-	401	Temperature-test chamber	595
Oscillator, miniature h.f.	469	Temperature transducer, subminiature	525
Oscillators, miniature stabilized	335	Tester, f.e.t.	332
Oscillator, swept	593	Test machine, new mark II multicore solderability	471
Oscillator, temperature-compensated crystal	727	Test set, semiconductor	657
Oscillator, test	335	Test system, semiconductor go/no-go	469
Oscillator, transistor	525	Tetrodes, power	526
Oscillator, transistor decade	401	Tetrode, u.h.f.	472
Oscillator and milivoltmeter, combined transistorized	791	Thermoelectric modules	397
Oscillators, backward-wave	790	Thermocouple potentiometer	594
Oscillograph, recording	268	Thermometer, electronic	660
Oscilloscope, sampling	528	Trace reader	53

	Page
Tracer, programmable semiconductor curve	470
Transceiver, transistorized vehicle	527
Transducers, absolute pressure	191
Transducer, capacitive movement	592
Transducer, proximity vibration	50
Transducer, torque	54
Transformers, micro-miniature	400
Transformers, ring current	336
Transistor holder, press-fit	267
Transistor lead preforming tool	268
Transistor, plastic-overlay	723
Transistor, silicon integrated chopper	474
Transmission test equipment	726
Transmitter receiver, s.s.b.	120
Transvertors	399
Trimmers, miniature	723
Tube, high-contrast storage	531
Tubes, image Isocon	791
Tuning unit, microwave	589
T.W.T. supply, low power	466
Ultrasonic hardness tester	124
Varactor, step-recovery	723
Variable-capacitor boxes	726
Vibration monitoring system	192
Voltmeter, a.f. milli-	795
Voltmeter, differential	125, 589, 658
Voltmeter, digital	122, 403, 794
Voltmeter, new 7in-scale low-cost valve	472
Voltmeter, versatile a.c.-d.c.	657
Washers for power transistors	791
Waveguide frequency meter	660
Welding tools, miniature	267
Wire bonder, ultrasonic	270, 796
Wire stripper, self-adjusting	725
Yarn clearer	397

E

Encoder for full-quality p.c.m. system using a modified monostable multivibrator, period-quantized, by V. K. Agarwal	773
Encoder using integrated circuits, binary-decimal, by K. J. Dean	744

F

Feedback pair, simplified design of the, by J. C. S. Richards	97
Filter circuit for tuned amplifiers and sinusoidal oscillators, a second-order active, by E. A. Faulkner and Viscount Downe	287
Filters, loading effects in two-section RC, by J. F. Young	23
Filter with independent control over the pole and zero locations, a simple active, by W. Farrer	219
Flight simulator for America	176
Flight simulator, the Belfast	171
FRENCH .. 57, 127, 197, 275, 341, 407, 475, 533, 597, 665, 731, 798	
Frequency divider using micrologic elements, by S. Jannazzo and G. Rustichelli	419
Frequency synthesizer, an electronically swept, by E. Kantarizis	442

G

Gate, high-speed linear, by E. A. Faulkner and J. B. Grimbleby	565
Generator, a 10MHz, 1A, 50V pulse, by R. W. Alsford and R. E. Hayes	507
Generator, digitizing-pulse, by S. C. Acharyya	503
Generator, linear-staircase, by M. Cadwallader	682
Generators for use in electrophysiology, constant voltage double-pulse, by A. F. Lewis	252
Generators, random and pseudorandom number, by M. Davio	558
GERMAN .. 64, 134, 204, 276, 342, 408, 476, 534, 598, 666, 732, 799	
Goonhilly to be extended	218

H

Hall-effect measuring system for large direct and alternating currents, by D. J. Lloyd and C. W. Taylor	452
High-voltage supplies, transistorized, by R. E. Crosbie	778

I

Impulse testing of dynamic systems using cross-correlation techniques, by F. Jones	310
Information theory and data transmission, simplified, by A. E. Cawwell—Part 1	212
Part 2	302
Input/output equipment for the Argus computer, new	112
Inverter, firing an adjustable-frequency three-phase, by R. L. V. de Lima Mendes	41
Inverter for mains operated equipment, a stable 50Hz, by W. T. Maloney	374

K

Kidney machine, an automatic	40
------------------------------	----

Page

L	
Laser radiation, continuously tunable	699
Learning situation, demonstration model for a simple, by P. C. Van Soest	629
Lens for television displays, new electromagnetic	428
LETTERS TO THE EDITOR .. 186, 262, 391, 458, 516, 586, 648, 715	
Binary to decimal convertor, a	186
Bridge circuit with high selectivity, improved RC	649
Cascade circuit using complementary transistors, a modified	262, 393
Converter, binary-to-decimal	649, 716
Corotrons	393
Counter, binary-quinary decade	517
D.C. follower, augmented	262
Decade counter, binary-quinary	716
Electrometer circuit, a junction transistor	648
Films, electrical resistance of evaporated nichrome	516
Giro handling equipment	187
Interference in thyristor controllers, suppression of radio	516
Nucleonic instrument design, economy and reliability	263
Null networks and frequency stability of null network oscillators	186
Oscillators, frequency stability in	649
Oscillator, negative-resistance transistorized	715
Peak-reading circuit, precision	648
Phase inversion in an overloaded amplifier	263
Recorder integrator using a unijunction transistor, simple	648
Solid-state multiplier, a simple	187
Stabilizing output of Wien bridge	392
Voltage reference source, a novel	391
Zener-diode alternatives	715
Low-voltage ring-of-two reference, by P. Williams	676

M

Measurement of Parameters of semiconductor devices, by G. May	483
MEETINGS THIS MONTH .. 56, 126, 196, 274, 340, 663, 730, 797	
Memory element, solid-state h.l.t.t.l. 16-bit, by Anh Nguyen-huu and R. H. Murphy	
Microcircuits, large-scale integration of	581
Microelectronics, new concept in	704
Modulation, combination leading and trailing edge variable slope pulse, by O. E. Kruse, D. L. Lewis and J. K. Jackson	174
Modulator, analysis of the capacitance error of a m.i.s.f.e.t. chopper, by J. Dostal	640
Modulators, large-deviation phase and frequency, by D. J. Comer	495
Monostable, a high duty cycle high stability, by R. C. French	372
Motors with electronic speed control, small brushless d.c.	99
Motor vehicles, electronic equipment for, by G. N. Patchett	228
Multiplication using logarithmic diodes, high frequency, by R. P. Ingram	110
Multivibrator, a wide frequency range voltage controlled, by R. J. P. Jones	14
Multivibrator with very small mark/space ratio, by S. Tesic	671

N

Negative-impedance-convertor circuits, large-signal characteristics and stability criteria of, by A. C. Davies	536
Noise analysis of feedback amplifiers, by P. J. Finnegan	612
Noise margins in binary electrological systems, by E. L. Jones	142
Non-linearity by analogue simulation, determination of, by G. W. Holbrook and J. S. Collins	172
Nucleonic instrument design, economy and reliability in, by B. Shepherd	100

O

Oscillator/quadrupler, crystal-controlled 164MHz, by D. Singh and J. Garters	769
Oscillators, distortion in RC bridge feedback, by V. B. Mehta	582
Oscillators for radio frequencies, some novel RC, by R. S. Sidorowicz—Part 1	498
Part 2	560

P

Phase-sensitive detector and its application to a resolved components voltmeter, a current-switching, by J. G. Lacy	148
Powermeter, thermistor, by S. M. Bozic and J. R. Whitbread	637
Power supply design, some approaches to photomultiplier, by R. Barlow and J. Watson	90
Power supply for 3kV, 60mA, stabilized, by G. Klein and C. W. Bodenhause	609

Power supply using controlled avalanche rectifiers, a mains stabilized high voltage, by R. W. J. Barker	161
Proportional plus rate information on a c.r.t. in the form of two pointers, a means of displaying, by M. R. Green and K. Lord	376
Product-assessment laboratories, the Plessey	439
PUBLICATIONS RECEIVED	340, 662, 719, 787
Pulse amplifiers, fast transistorized, by D. Ivekovic	739
Pulse circuit for long delays, a, by B. Jovicic	424
Pulse-length-modulation systems, characteristics of asynchronous and bipolar, by P. D. Sharma	691

R

Radio and space research field station at Chilbolton	447
Receivers, dynamic measurements on narrow-band, by J. F. Golding	448
Receiver, transistorized colour television	585
Recorder integrator using a unijunction transistor, a simple, by A. R. Atkins	440
Recorder system, a simple frequency-modulation tape, by W. Tempest and M. E. Bryan	87
Recording of mechanical position, a convertor for automatic, by U. Kracht	250
Redundancy in digital systems, by F. A. Inskip	244
Regulation of line level in long carrier links, automatic, by J. Korn	429

S

Satellite communications terminal for the Royal Navy	19
Satellite in America, UK-3	45
Satellite launcher, a small British	301
Scaler design consideration, series-connected tunnel-diode, by Z. C. Tan and J. B. Earnshaw	624
Scanning electrical information channels	325
Schmitt trigger circuit, an analysis of the action of a, by D. W. H. Hampshire and D. Petersen	38
Schmitt trigger circuit used in conjunction with a current-integrating capacitor, behaviour of a, by L. A. Kemp, D. O. Bottrill and S. Klevenhagen	752
SHORT NEWS ITEMS	46, 115, 184, 259, 326, 462, 521, 587, 653, 720, 788
Slippage of asynchronous motors, a digital instrument for measuring the, by V. Bohm, V. Popescu and T. Teitel	106
Solar noise as a means of providing accurate vertical polar diagrams for radars, by M. J. B. Scanlan—Part 1	280
Part 2	367
Speed transients using optical gratings, measurement of, by D. K. Ewing	2
Stimulator, a dual channel, by J. W. Hinshelwood and A. G. Seabridge	16
St. Thomas's Hospital intensive-care monitoring system	506
Stub-matching by scattering-matrix methods, analysis of, by J. N. Saha	571
Switches for computer mode control, analogue, by N. W. Bellamy and S. R. Styler	512

T

Tchebycheff directional couplers, the design and manufacture of waveguide, by K. E. Hancock	292
Telecommunication system for light aircraft, combined	451
Telemetry system, short-range shock-measuring, by J. Morrison	542
Telephone exchanges, electronic	96
Television camera, a new photoconductive	86
Television in the BBC Engineering Division	647
Television, London educational	286
Television outside broadcast, first colour	494
Television picture tube, a new colour	387
Temperature control, application of a <i>pnpn</i> switch to, by A. Lupic and B. Kovak	28
Thermistor, a diamond	33
Thermistors, calculation of V-I curves for n.t.c., by M. R. McCann—Part 1	346
Part 2	426
Thermistor thermometer, sensitive, by J. C. S. Richards	674
Thin and thick film circuits	
Timers using unijunction transistors, by J. F. Young	621
Timing unit for control of stimulation signals, by K. J. Kapota	756
Tracer providing calibrated axes, voltage/current-characteristic, by Min Wei Li and G. Hoffmann de Visne	644
Transistor calculations, unified, by D. W. W. Rogers	30
Transistor parameters and their influence on amplifier risetime, by D. Ivekovic	680

Transmission lines, strip, by J. Swift	490
Transmission lines with matched loads, analysis of repeated systems of, by J. N. Saha	632
Triangular-wave generator with large frequency sweep, an accurate, by G. Klein and H. Hagenbeuk	388
Twin-T filter design having an adjustable centre frequency, by K. G. Beauchamp	384

V

Voice-operated watch, a, by K. J. Kapota	114
Voltage reference source, a novel, by T. P. Dawson and G. C. Taylor	113
Voltmeter, instantaneous pulse-measuring, by N. A. Westman, S. Westerlund and S. T. Berglund	748

W

Wattmeter for magnetic loss measurement, a thermocouple, by J. K. Choudhury, R. K. Mondal and S. N. Bhattacharyya	34
---	----

AUTHORS

A

Acharyya, S. C., Digitizing-pulse generator	503
Agarwal, V. K., Period-quantized encoder for toll-quality p.c.m. system using a modified monostable multi-vibrator	773
Alsford, R. W. (with R. E. Hayes), A 10MHz, 1A, 50V pulse generator	507
Atkins, A. R., A simple recorder integrator using a unijunction transistor	440

B

Barker, R. W. J., A mains stabilized high voltage power supply using controlled avalanche rectifiers	161
Barlow, R. (with J. Watson), Some approaches to photo-multiplier power supply design	90
Beadle, D. G. (with D. E. Susans), Digital coding equipment for recording field strength measurements	233
Beauchamp, K. G., A twin-T filter design having an adjustable centre frequency	384
Bellamy, N. W. (with S. R. Styler), Analogue switches for computer mode control	512
Bhattacharyya, S. N. (with J. K. Choudhury and R. K. Mondal), A thermocouple wattmeter for magnetic loss measurement	34
Bhola, S. K. (with R. H. Murphy), Design of low level d.c. chopper amplifiers	318
Bodenhausen, C. W. (with G. Klein), Stabilized power supply for 3kV, 60mA	609
Bohm, V. (with V. Popescu and T. Teitel), A digital instrument for measuring the slippage of asynchronous motors	106
Bozic, S. M. (with J. R. Whitbread), Thermistor power-meter	637
Brandwijk, J. F. (with P. H. Sydenham), A rapidly reversible 700kHz digital decade counter	298
Bryan, M. E. (with W. Tempest), A simple frequency-modulation tape recorder	87

C

Cadwallader, M., Linear-staircase generator	682
Cawkell, A. E., Simplified information theory and data transmission (Part 1)	212
(Part 2)	302
Choudhury, J. K. (with R. K. Mondal and S. N. Bhattacharyya), A thermocouple wattmeter for magnetic loss measurement	34
Collins, J. S. (with G. W. Holbrook), Determination of non-linearity by analogue simulation	172
Comer, D. J., Large-deviation phase and frequency modulators	495
Cowell, T. K., A junction transistor electrometer circuit	362
Crosbie, R. E., Transistorized high-voltage supplies	778

D

Dadd, R. H., Approach to applied circuit synthesis	668
Dalal, S., Simulation of cone of confusion	78
Davies, A. C., Large-signal characteristics and stability criteria of negative-impedance-converter circuits	536
Davio, M., Random and pseudorandom number generators	558
Davison, L. (with R. Wilson), A simple digital-analogue converter with reciprocal read-out	381
Dawson, T. P. (with G. C. Taylor), A novel voltage reference source	113

	Page		Page
Dean, K. J., Binary-decimal encoder using integrated circuits	744	Jacobsen, J. (with S. C. Loh), Backfire meander-line antenna	575
Dostal, J., Analysis of the capacitance error of a m.i.s.f.e.t. chopper modulator	640	Jannazzo, S. (with G. Rustichelli), Frequency divider using micrologic elements	419
Downe, Viscount (with E. A. Faulkner), A second-order active filter circuit for tuned amplifiers and sinusoidal oscillators	287	Jones, E. L., 'Noise margins' in binary electrological systems	142
E		Jones, F., Impulse testing of dynamic systems using cross-correlation techniques	310
Earnshaw, J. B. (with Z. C. Tan), Series-connected tunnel-diode scaler design consideration	624	Jones, R. J. P., A wide frequency range voltage controlled multivibrator	14
Ellis, A. B. E., Extraction of signals from noise using digital techniques	546	Jovicic, B., A pulse circuit for long delays	424
Ewing, D. K., Measurement of speed transients using optical gratings	2	K	
F		Kantarizis, E., An electronically swept frequency synthesizer	442
Farrer, W., A simple active filter	219	Kapota, K. J., A voice operated watch	114
Faulkner, E. A. (with Viscount Downe), A second-order active filter circuit for tuned amplifiers and sinusoidal oscillators	287	Kapota, K. J., Timing unit for control of stimulation signals	756
Faulkner, E. A. (with J. E. Grimbleby), High-speed linear gate	565	Kemp, L. A. W. (with D. O. Bottrill and S. Klevenhagen), Behaviour of a Schmitt trigger circuit used in conjunction with a current-integrating capacitor	752
Finnegan, P. J., Noise analysis of feedback amplifiers	612	Klein, A. G. (with R. W. Gellie), Accurate a.c.-d.c. converter for low frequencies	484
Fitch, P., An analyser for use in human electromyography	240	Klein, G. (with C. W. Bodenhausen), Stabilized power supply for 3kV, 60mA	609
Franklin, D. P., Decade boxes with binary output	154	Klein, G. (with H. Hagenbeuk), An accurate triangular-wave generator with large frequency sweep	388
French, R. C., A high duty cycle stability monostable	372	Klein, G. (with H. Hagenbeuk), Accurate triangle-sine converter	700
G		Knight, P., The design and adjustment of m.f. broadcasting aerials	6
Gellie, R. W. (with A. G. Klein), Accurate a.c.-d.c. converter for low frequencies	484	Korn, J., Automatic regulation of line level in long carrier links	429
Golding, J. F., A square-law detector of power measurement	82	Korytkowski, J., Accurate current-to-frequency converter	568
Golding, J. F., Dynamic measurements on narrow-band receivers	448	Kovac, B. (with A. Lupic), Application of a pnpn switch to temperature control	28
Gosling, W., Amplifiers combining bipolar and field-effect transistors	478	Kracht, U., A converter for automatic recording of mechanical position	250
Green, M. R. (with K. Lord), A means of displaying proportional plus rate information on a c.r.t. in the form of two pointers	376	Kruse, O. E. (with D. L. Lewis and J. K. Jackson), Combination leading and trailing edge variable slope	174
Grimbleby, J. E. (with E. A. Faulkner), High-speed linear gate	565	L	
H		Lacy, J. G., A current-switching phase-sensitive detector and its application to a resolved components voltmeter	148
Hagenbeuk, H. (with G. Klein), An accurate triangular-wave generator with large frequency sweep	388	Lewis, A. F., Constant voltage double pulse generators for use in electrophysiology	252
Hampshire, D. W. H. (with D. Petersen), An analysis of the section of a Schmitt trigger circuit	38	Lewis, D. L. (with O. E. Kruse and J. K. Jackson), Combination leading and trailing edge variable slope	174
Hancock, K. E., The design and manufacture of waveguide Tchebycheff directional couplers	292	Li, Min Wei (with G. Hoffmann de Visme), Voltage/current-characteristic tracer providing calibrated axes	644
Hayes, R. E. (with R. W. Alsford), A 10MHz, 1A, 50V pulse generator	507	Lloyd, D. J. (with C. W. Taylor), A Hall-effect measuring system for large direct and alternating currents	452
Hilling, A. E., A 50 to 500MHz broadband transistor amplifier	352	Loh, S. C. (with J. Jacobsen), Backfire meander-line antenna	575
Hinshelwood, J. W. (with A. G. Seabridge), A dual channel stimulator	16	Lord, K. (with M. R. Green), A means of displaying proportional plus rate information on a c.r.t. in the form of two pointers	376
Hoffmann de Visme, G. (with Min Wei Li), Voltage/current-characteristic tracer providing calibrated axes	644	Lupic, A. (with B. Kovac), Application of a pnpn switch to temperature control	28
Højberg, K. Soe, Logarithmic current-measuring transistor circuits	20	M	
Holbrook, G. W. (with J. S. Collins), Determination of non-linearity by analogue simulation	172	Maloney, W. T., A stable 50Hz inverter for mains operated equipment	374
Hood, R. J., Transistorized 100MHz binary counter	642	May, G., Measurement of parameters of semiconductor devices	483
Howorth, D. (with J. G. Ingleton), Delay unit suitable for television-field delay	734	Mayo, C. G. (with J. W. Head), Open limit calculus	696
Howorth, D. (with C. R. Caine and L. T. E. Ward), Precision temperature-controlled environments for ultrasonic fused quartz delay lines	706	McCann, M. R., Calculation of V-I curves for N.T.C. thermistors (Part 1)	346
Hurst, S. L., An asynchronous binary-coded-decimal circuit with gated feedback	25	McCann, M. R., Calculation of V-I curves for N.T.C. thermistors (Part 2)	426
I		Mehta, V. B., Distortion in RC bridge feedback oscillators	582
Ingram, R. P., High frequency multiplication using logarithmic diodes	110	Mendes, R. L. V. de Lima, Firing an adjustable-frequency three-phase inverter	41
Ingram, R. P., Train decade counter	759	Mondal, R. K. (with J. K. Choudhury and S. N. Bhattacharyya), A thermocouple wattmeter for magnetic loss measurement	34
Inskip, F. A., Redundancy in digital systems	244	Morris, D. J., All-magnetic circuits incorporating new coupling-loop configurations	412
Ivekovic, D., Fast transistorized pulse amplifiers	739	Morris, I. G., New shutdown amplifier (s.d.a.) for nuclear reactors (Part 1)	485
Ivekovic, D., Transistor parameters and their influence on amplifier risetime	680	Morris, I. G., New shutdown amplifier (s.d.a.) for nuclear reactors (Part 2)	553
J		Morrison, J., Short-range shock-measuring telemetry system	542
Jackson, J. K. (with O. E. Kruse and D. L. Lewis), Combination leading edge and trailing edge variable slope	174		

	Page		Page
Mundle, W. J., Averaging of heart-rate responses in rats following electrical brain stimulation	686	Sharma, P. D., Characteristics of asynchronous and bipolar pulse-length modulation systems	691
Murata, Y., Comparator-hold circuit using the facing-coupled Esaki diode pair	356	Shepherd, B., Economy and reliability in nucleonic instrument design	100
Murphy, R. H. (with S. K. Bhola), Design of low level d.c. chopper amplifiers	318	Sidorowicz, R. S., Some novel RC oscillators for radio frequencies (Part 1)	498
Murphy, R. H. (with Anh Nguyen-huu), Solid-state h.l.t.t.l. 16-bit memory element	604	(Part 2)	560
Murthy, K. K. (with K. C. Ng), An electromechanical running average	169	Singh, D. (with J. Garters), Crystal-controlled 164MHz oscillator/quadrupier	769
N		van Soest, P. C., Demonstration model for a simple learning situation	629
Ng, K. C. (with K. K. Murthy), An electromechanical running average	169	Spencer, T., V.H.F. solid-state power amplifier design ..	72
Nguyen-huu, Anh (with R. H. Murphy), Solid-state h.l.t.t.l. 16-bit memory element	604	Stevenson, T. J., Two terminal drive circuits for piezo-electrically driven mechanical vibrator	222
O		Styler, S. R. (with N. W. Bellamy), Analogue switches for computer mode control	512
Olthoff, W., Example of digital-to-analogue conversion ..	763	Susans, D. E. (with D. G. Beadle), Digital coding equipment for recording field strength measurements ..	233
P		Swift, J., Strip transmission lines	490
Patchett, G. N., Electronic equipment for motor vehicles ..	228	Sydenham, P. H. (with J. F. Brandwijk), A rapidly reversible 700kHz digital decade counter	298
Peterson, D. (with D. W. H. Hampshire), An analysis of the action of a Schmitt trigger circuit	38	T	
Popescu, V. (with V. Bohm and T. Teital), A digital instrument for measuring the slippage of asynchronous motors	106	Takeshima, T., X-band omnidirectional double-slot-array antenna	617
Pridham, G. J., Analysis of feedback amplifiers	436	Tan, Z. C. (with J. B. Earnshaw), Series-connected tunnel-diode scaler design consideration	624
R		Tawfiq, T. K., Planning a v.h.f., f.m. radio system for bus services	224
Rakovich, B. D. (with S. Tesic), Voltage-to-frequency conversion	766	Taylor, C. W. (with D. J. Lloyd), A Hall-effect measuring system for large direct and alternating currents ..	452
Ricardi, J., Directivity of an array of slots on the surface of a cylinder	578	Taylor, G. C. (with T. P. Dawson), A novel voltage reference source	113
Richards, J. C. S., Sensitive thermistor thermometer ..	674	Teital, T. (with V. Bohm and P. Popescu), A digital instrument for measuring the slippage of asynchronous motors	106
Richards, J. C. S., Simplified design of the feedback pair ..	97	Tempest, W. (with M. E. Bryan), A simple frequency-modulation tape recorder	87
Ridler, P. F., The parameters of the current-driven source-follower	290	Tesic, S., Multivibrator with very small mark/space ratio ..	671
Riddle, C., Time-amplitude and amplitude-time converters using linear ramps (Part 1)	600	W	
(Part 2)	711	Watson, J. (with R. Barlow), Some approaches to photo-multiplier power supply design	90
Rogers, D. W. W., Unified transistor calculations	30	Westman, N. A. (with S. Westerlund and S. T. Berglund), Instantaneous pulse-measuring voltmeter	748
Ruckman, R. J. S., A data logger scaler and alarm limit comparator	177	Whitbread, J. R. (with S. M. Bozic), Thermistor power-meter	637
Rustichelli, G. (with S. Jannazzo), Frequency divider using micrologic elements	419	Williams, P., Low-voltage ring-of-two reference	676
S		Wilson, D. R., A note on a.c. compensating networks ..	316
Saha, J. N., Analysis of stub-matching by scattering-matrix methods	571	Wilson, J. P., A simple high-speed analogue multiplier ..	11
Saha, J. N., Analysis of repeated systems of transmission lines with matched loads	632	Wilson, R. (with L. Davison), A simple digital-analogue convertor with reciprocal read-out	381
Scanlan, M. J. B., Solar noise as a means of providing accurate vertical polar diagrams for radars (Part 1) ..	280	Y	
(Part 2)	367	Young, J. F., Loading effects in two-section RC filters ..	23
Seabridge, A. G. (with J. W. Hinshelwood), A dual channel stimulator	16	Young, J. F., Coupling Dekatron selectors with low-cost transistors	323
		Young, J. F., Timers using unijunction transistors	621

© MORGAN-GRAMPIAN LIMITED 1967