

Index

A

ABS	26.2	Antenna bandwidth	13.4	End-fed	15.1, 15.11
Abrasives	26.9	Antenna bridge	25.29	Fixed long wire beams	15.41
Absorption wavemeter	25.13, 25.15	Antenna cables, routing into house	13.16	G3LDO double-D	15.40
Acetal Copolymer	26.2	Antenna directivity	13.2	G5RV	15.7
Acrylics	26.2	Antenna feeders (see Feeders)		G6XN	15.39
Adhesives	26.2	Antenna fields, near and far	13.1	Ground plane	15.5
Admittance	14.7	Antenna gain	1.23, 13.2	Loop antennas	15.25
AGC	6.15	Antenna height and propagation	12.10	Marconi	10.13
Alternating current	1.11	Antenna insulators	13.13	Mobile	15.43
Measurements	25.4	Antenna matching and tuning	15.11	Open wire tuned dipole	15.8
Aluminium	26.1	Balanced ATUs	15.18	Parallel dipoles	15.7
Amateur Television	20.1	Matching a mobile antenna	15.45	Quad	15.37
1.3GHz equipment	20.2	Transmatch	15.14	Rhombic	15.42
10GHz equipment	20.4	Tuning unit (ATU)	15.12, 15.13	Rotary beam	15.35
Fast scan	20.2	V-beam	15.42	Skeleton slot	15.34
Operating practice	20.7	Vertical beam, phased	15.41	Using HF wire beam on low bands	15.3
Slow scan	20.1	Versatuner, MFJ	15.18	W6RCA multiband doublet	15.9
VHF/UHF		VHF/UHF	16.11	Antennas, microwave	17.1
Ammeter, RF	10.22	Yagi, HF	15.35	Helical	17.1, 17.6
Amplifier		Z-match	15.23	Horn	17.11
435MHz mobile booster	5.13	Antenna masts	13.17	Patch antennas	17.1
Audio	3.20, 5.20, 5.24, 8.22	Commercial	13.18	Slot	17.1, 17.5
Buffer	4.13	Counter-weighted fold-over	13.18	Yagi	17.1, 17.8
Combining	7.16	G2XK lightweight fold-over	13.17	Antennas, VHF/UHF	16.1
DC	5.20	Wooden	13.20	Arrays of	16.9
FET and MOSFET	5.7, 5.9, 5.10	Antenna modelling / simulation	13.6	Collinear	16.28
Integrated circuit	5.8	Antenna polarisation	13.4	Dipole	16.1
Intermediate frequency (IF)	5.7, 5.9, 6.33	Circular, feed and reversing	16.38	Dipole, gain sleeve	16.27
Linear (see Linear amplifier)		Control of	16.36	Dipole, skirted	16.27
Matching	7.15	Switch, mast-head for 145MHz	16.37	Dipole, vertical for portable use	16.18
MMIC	5.9, 11.7	Antenna radiation patterns	13.2	Discone	16.27
Neutralising	3.30	Antenna resonance	13.1	Ground-plane, quarter-wave	16.24
Operational (op-amps)	3.19, 5.20	Antenna supports (see also Antenna masts)		Hand-held and portable	16.17
Power	5.9, 5.13	Chimney	13.16	HB9CV mini-beam	16.18
Power for HF	7.11	Trees	13.20	Helix, axial mode	16.15
Power for microwaves	11.19	Wall brackets	13.15	Helix, normal mode	16.17, 16.20
Power for VHF/UHF	9.24	Antenna tubing	13.11	J antenna	16.31
Preamplifiers, microwave	11.14	Antenna wind loading	13.21	Log periodic	16.14
Preamplifiers, VHF/UHF	5.7, 9.8, 9.18, 21.9	Antenna wire	13.11	Mobile	16.20
Antennas, constructing beams		Antennas, for 136kHz (see LF)	13.14	Mounting	16.13
Protection	7.15	Antennas for satellite communication	16.33	Omni-directional	16.24
Radio frequency (RF)	5.6, 6.26	Crossed-dipoles	16.33	Omni-V for 144MHz	16.24
Radio frequency (RF), VHF/UHF	9.9	Eggbeater	16.34	Quad	16.7, 16.13
Receiver front-end	8.32	Hairpin	16.34	Siting and cabling	9.2
Solid state versus valve	7.13	Quadrifilar helix, or Volute	16.35	Stacking	16.14
Stability	6.34	Turnstile	16.33	Whip, dual-band for 144/435MHz	16.25
Transistor (see Transistor)		Centre-fed	15.1	Whip, half and five-eighths-wave	16.21
Valve	3.29, 5.14, 7.13	Centre-fed multiband	15.3	Whip, seven-eighths-wave	16.22
Video	5.9	Compact beams	15.7	Yagi	16.2
Amplitude modulation (see Modulation)		Commnidipole	15.39	Yagi, long	16.6
AMTOR	19.4	Delta loop	15.10	Yagi, skeleton slot	16.12
Analogue to digital		Dipole	15.33	ARQ	19.1, 19.7
Converter	3.23	Atmosphere, the Earth's			12.1
Interface	5.38				

INDEX

Atoms	1.1, 3.1	Components		Testing	25.8
Attenuators	5.37, 6.27, 25.35	Colour codes	A.5	Valve	3.25
Audio stages in receiver	6.37	Measuring	25.8	Varactor	3.5
Automatic gain control (see AGC)		Microwave, modern	11.3	Zener	3.5
AX25 (see Packet radio)		SMD (see Surface mount)		Dip oscillator	25.13
		Storage and control	26.27	Direct conversion receiver (see Receivers)	
B					
Balanced circuits	1.20	Compression	5.1	Diversity reception	12.13
Balun	14.12	Computer		Doping	3.2
Choke	14.13	Circuit design by	22.2	Doppler shift	21.3
PAOSE HF	14.14	Connecting to your radio	19.2	Dummy load	2.2
Transformer	14.13	Controlling your radio by	19.2, 22.6	For 136kHz (see LF)	
VHF and UHF	14.14	CPU	22.1	Dynamic range	9.5
Bandwidth	2.13, 5.1	EMC	23.11	DX Clusters	19.10
Batteries	1.4	Inside	22.1		
Charging	24.11	Operating system	22.1	E	
Primary	24.11	Parallel port	22.5	Earth / ground	
Reverse protection	24.12	Serial port	22.5	Artificial	15.2
Secondary	24.11	Software	22.1, 22.2	Effect of	13.5
Beacon network	12.27	Connectors, coaxial (See Coaxial connectors)		For 136kHz transmitting (see LF)	
Beam tetrode (see Valves)		Constant current generator	3.13	For EMC	23.3
Breakthrough (see Electromagnetic compatibility)		Conductance	1.3	On microwave PCBs	11.4
Bias		Construction techniques		Real	15.2
Circuits	3.11	Microwave	11.3	RF	15.2
Classes of	3.11, 3.29	Conductors	1.1	Safety (PME)	15.2
Brass	26.1	Construction	26.1	Effective aperture of antennas	1.23
		Copper	26.2	Effective radiated power (ERP) (see Power)	
		Corrosion	26.4	Electrical units	1.2
C					
Cabinets	26.27	Coupled circuits	1.17, 5.27, 7.1	Electromagnetic spectrum	1.21, 12.4
Calibrator, receiver	25.21	Crystal		Electromagnetic wave	13.1
Capacitance	1.6	Buying for oscillator	4.10	Electromagnets (see Magnets)	
Formulas	A.1	Equivalent circuit	4.11	Electromotive force (EMF)	1.2, 1.3
In AC circuits	1.13	Filter (see Filters)		EME (see Moonbounce)	
Measuring with dip oscillator	26.14	Oscillator (see Oscillators)		Energy	1.2
Meter	25.8	Quartz	1.17, 2.15	Epoxides	26.3
Capacitors, fixed		Temperature coefficient	4.10	EZNEC (see Antenna modelling)	
Ceramic	2.4	Temperature control	4.10		
Electrolytic	2.8	CTCSS signalling	5.40	F	
Glass	2.7	Current flow	1.2	Facsimile	20.1
Gunn	3.7	Current measurement	25.1	Fading (see Propagation)	
In radio equipment	1.7	CW (see Morse)		Faraday rotation	21.8
In series and parallel	1.7	Cyanoacrylates	26.4	Faraday screen	2.11
Mica	2.5			FEC	19.1
Paper	2.7	Darlington pair	3.13	Feeders, antenna (see also Transmission lines)	
Plastic film	2.7	Data communication	19.1	1.21, 1.23	
Capacitors, surface mount		Developments	19.1	Field effect transistor (FET) (See Transistor)	
(see Surface mount)		Getting started	19.1	Field strength	12.2
Capacitors, variable	2.8	Decibels	1.28, A.1	Meter	5.37, 25.35
Cathode ray tubes	3.30	Demodulation (see Receiver)		Measuring on LF	10.23
Charge	1.2	Digital modes (see Data communication)		Filters	1.18, 5.25, 5.27
CLOVERII	19.7	Digital signal processing (DSP)	6.7, 8.1, 8.3,	Active	5.33, A.16
Coaxial feeder (see Transmission lines)		8.4, 8.8, 8.29, 8.38		Audio	6.37
Coaxial connectors	14.7	Digitising speech	5.39	Bandpass	5.33, 8.35
Connecting to microwave PCBs	11.4	Diodes	3.2	Butterworth	A.11
Codec	8.9, 8.12, 8.15	Germanium	3.6	Chebyshev	A.4, A.12
Coil winding	A.3	In power supplies	24.3	Ceramic	5.33, 6.25, 7.10
Colour codes (see Components)		Light emitting (LED)	3.7	Crystal	5.30, 6.22, 7.9
Compact disk (CD), info on	22.5	PIN	3.5, 5.14	CW	5.34
Comander	5.25	Schottky barrier	3.6	Design calculations	A.8
				Elliptic	A.8

For EMC	23.6	Pot cored	A.3	Transmitter, 1kW	10.10
High Q types	5.30	Surface mount (see Surface mount)		Transmitters	10.6
IF	9.12	Integrated circuits		Transmitters, Class D	10.7
Ideal and real	5.26	Digital	3.21	Light emitting diodes (see diodes)	
LC	5.26	In receivers	6.21	Linear amplifier	
Low pass	5.9, 5.27	Linear	3.19	100W HF	5.11
Mechanical	5.30, 6.25, 7.10	RF power (see also Amplifiers)	5.13	50MHz	5.12
Microstrip	5.28, A.14	Interference (see Electromagnetic compatibility)		Choosing	7.38
Notch	5.35	Intermediate frequency (IF)		Constructing	7.39
Roofing	6.22	Amplifier (see Amplifiers)		Grounded-grid, 200W HF	5.18
Switched capacitor	5.35	Choice of	6.18, 9.6	Interfacing to exciter	7.42
VHF and above	5.28	In PIC-A-STAR project	8.15	Medium/high power solid state HF	7.37
Flutter (see Propagation)		Intermodulation	1.27, 5.1, 6.12, 9.4	Passive grid, 400W HF	5.19
Frequency and wavelength	1.22, A.1	International space station	21.2	SWR protection	7.41
Frequency counter	26.26	Internet, the (see also the references section at the end of most chapters)	22.4	VHF, double-tetrode	5.17
Frequency marker	26.17	Access and EMC	23.7, 23.11	Locators	12.24
Frequency modulation (see Modulation)		Ionosphere	12.1, 12.15	Long-tailed pair	3.14
Frequency synthesis	4.14	Wave propagation in	12.6		
Analogue	4.14	Ionospheric		M	
Direct digital synthesis (DDS)	4.17, 10.12	Disturbances	12.20	Magnetic fields, intercation of	1.9
Huff and puff stabiliser	4.16	Layers	12.16	Magnetic materials	2.9
Partial	6.19	Predictions	12.25	Magnetism	1.8
Phase-locked loop (PLL)	4.14	Waves	12.3	Magnetosphere, the Earth's	12.15, 12.19
Fresnel zones	10.12	Isolation	5.1	Magnets	
		Isotropic radiator	1.23	Permanent	1.8
G		Insulation	2.1	Electromagnets	1.8, 1.9
Gain	5.1	Insulators, antenna	1.1	Magnification factor (see Q)	
Gain compression	9.4			Map projections	12.22
Galvanic series	26.4			Matching	
Gamma match (see Matching)				Antennas	14.16
Generators, mechanical	1.4	J		Gamma match	14.14
Germanium diode (see Diodes)		Junction FET (JFET) (See Transistors)		Omega match	14.15
Ground (see Earth)				Using LC circuits	5.30
Ground waves	12.3, 12.8, 12.10	K			
Gunn diode (see Diodes)		Key click filter	1.11	Maximum power transfer	1.3
		Keys, Morse (see Morse)		Memory	3.22
H				Metals	26.1
Harmonics	1.12	L		Meters	
Distortion	5.1	Lacquer	26.29	Analogue	25.1
Headphones	2.14	Laminates	26.2	Digital	25.5
Heatsinks	26.15	Laser DXing	11.45	MFSK16	19.6
For power amplifiers	7.16	Lettering for front panels	26.30	Microphones	2.14
Hellschreiber	19.5	LF - the 136kHz band	10.1	Microprocessor	3.23
		Amateur receivers and transceivers	10.1	PIC	8.1, 5.41
		Antennas for receiving	10.3, 10.19, 10.21	Microstrip (see Filters)	
I		Antennas for transmitting	10.13, 10.15,	Microwave amateur allocations	11.3
Impedance	1.14, 5.1, A.2		10.18	Microwave antennas (see	
Antenna feed	13.2	Antenna voltage and safety	10.15	microwave)	
Bridge	25.9	Commercial equipment for	10.2	Mixer	5.1
Characteristic	14.1, A.1	Converters	10.4	Balanced	5.2, 7.5
Measurements	25.9	Dummy loads	10.23	Diode	5.2
Transformation in antennas	14.2	Estimating ERP	10.14	'H' mode	6.45
Inductance		Ground systems	10.16	In receivers	6.29
In AC circuits	1.13	Interference reduction	10.19, 10.21	JFET	5.3, 5.5
Measuring with dip oscillator	26.14	Loading coils	10.17	MOSFET	5.4, 9.11
Mutual	1.10	Matching loop antennas	10.18	Practical circuits	5.2
Self	1.9	Matching vertical antennas	10.16	Products	5.2
Inductors	2.9	Measurements	10.22	Quadrature	11.30
Chokes	2.10	Oscillators	10.11	Ring	5.3, 6.45
Energy storage	2.10	Receiver preamplifier	10.3	Semiconductor	5.3
In series and parallel	1.10, A.2	Receiver requirements	10.1	Test assembly	6.43

INDEX

VHF/UHF	9.10	Overtone	4.9	Voltage regulators	3.21, 5.36, 24.7
MMIC (see also Amplifiers)		Pierce	4.9, 4.11	Preamplifiers, (see Amplifiers)	
For microwave use	11.5	Practical	4.4	Preferred values	2.3
Modulation	1.24	Standard, high precision 10MHz	11.10	Primary cells	1.4
Amplitude (AM)	1.24	Synthesised (see Frequency synthesis)		Printed circuit boards (PCB)	
Digital	1.26	Vackar	4.7	Designing	26.20
Frequency (FM)	1.25, 9.13	Variable crystal (VXO)	4.11	Manufacture	8.6, 26.19
Phase modulation (PM)	1.26	Variable frequency (VFO)	4.2, 4.7	Materials for microwave use	11.4
Single sideband (see SSB)		VHF	4.12	Propagation	12.1
Techniques	7.5	Voltage controlled	4.8	Books on	12.27
Modulators (see Mixers)		Oscilloscope	25.7	Effect of height	12.10
Molecules	1.1	Measuring with	25.7	Forecasts	12.27
Moonbounce	21.7	Tubes	3.31	Free space	12.4
Station equipment for	21.8	Overload	5.1, 5.37	Grey line	12.25
Propagation	21.7			Internet sites about	12.27
Morse	18.1	P		Modes of	12.3
Break-in (QSK)	7.21, 8.31	Packet radio	19.7	Multi-path, flutter and fading	12.9, 12.12
Keyer	18.4	AX25	19.8	Via Moon (see Moonbounce)	
Keys	18.3	Channel access	19.8	Protective Multiple Earthing	15.2, 23.3
Learning	18.2	Digipeaters	19.9	Prototype boards	26.18
QRSS and DFCW	18.6	Network nodes	19.9	PSK31	19.4
Transmission and reception	18.5	Operation	19.9	PTFE	26.3
MOSFETs (See Transistor)		TCP/IP	19.10	PVC	26.3
MT63	19.6	PACTOR	19.7		
N		Painting cabinets	26.28	Q	
Neutralising (see Amplifiers)		Passive intermodulation products	23.3	Q the magnification factor	1.15, A.2
Nickel silver	26.4	Patch antennas (see Antennas, microwave)		QRSS (see Morse)	
Noise	5.1, 23.9	Path profiles, plotting	12.24	Quartz crystals (see Crystals)	
VHF/UHF	9.2, 9.5	PCB (see Printed circuit boards)			
Noise bridge	25.10	Pentode (see Valves)		R	
Noise factor/Noise figure	6.10, 9.3	Perspex (see Acrylics)		Radiation, electromagnetic	12.2
Noise limiter / blanker	6.35	Phase	1.12	Radiation resistance	1.23, 13.2
Null steerer (see also LF, Interference reduction)	6.35	Phase shift network	7.7	Radio astronomy	21.7
Nylon	26.3	Phase modulation (see Modulation)		Reactance (see also Impedance)	A.2, A.6, A.7
O		PIC chip (See Microcomputers)		Receiver	6.1
Ohm's Law	1.3, A.2	PIC-A-STAR project	8.1	Active devices for	6.21
Op-amps (see Amplifiers)		Pic 'N' Mix project	8.3, 8.4, 8.19, 8.25	AGC (see AGC)	
Oscillator	4.1	PIN junction	3.2	Audio stages (see Audio)	
Basic requirements	4.1	Plastics	26.2	Basic requirements	6.1
Buffer (see Amplifier)		Polar diagrams (see Antenna radiation)		Basic types of	6.1
Building	4.6	Polycarbonate	26.3	Blocking	6.12
Butler	4.11	Polyethylene	26.3	Building	6.39
Ceramic resonator	4.11	Polypropylene	26.3	Cross modulation	6.12
Clapp	4.2, 4.4, 4.7	Potential difference (PD)	1.3	Demodulation	6.34
CMOS	4.10	Power	1.2, 1.5, A.2	Design trends	6.5
Colpitts	4.2, 4.4, 4.7, 4.9	Consumption	5.1	Digital techniques	6.6
Components	4.6	Effective radiated	1.23, 10.14	Direct conversion	6.2, 6.42, 9.33
Crystal	4.8	Meter	5.23, 25.31	DSP (see Digital signal processing)	
Evaluation of	4.8	Output measurement	25.27	Filters (see filters)	
Franklin	4.4	Power amplifiers (see Amplifiers)		For 136kHz (see LF)	
Gouriet-Clapp	4.7	Power supplies	24.1	For FM	9.13
Hartley	4.2, 4.4, 4.5	Choice of components	24.6	Frequency stability (see also Oscillator)	6.19
'Huff and puff' (see Frequency synthesis)		Constant current	24.10	Gain distribution	6.18
Low frequency sinewave	26.16	Dual voltage	24.7	IF (see Intermediate frequency)	
Microwave	11.9	For op-amps	5.23	Input circuits	6.27, 6.41, 6.44
Multiplier	4.12	From mains supply	24.1	Intermodulation (see Intermodulation)	
Noise	6.15	Over-voltage protection	24.10	Microwave	11.1
		Renewable energy	24.13	Mixers (see Mixers)	
		Soft starting	24.5	Modifications to	
		Switch mode	24.10		6.37

Noise (see Noise factor/figure)		Semiconductors	1.19, 3.1	Tin plate	26.2
Polyphase, experimental	6.48	Shaft encoder	5.38	Tools	26.5
Protection	6.26	Signal source		And working conditions	26.26
Reciprocal mixing	6.15	HF	25.18	Using	26.9
Regenerative	6.2, 6.41	VHF/UHF	25.19	Transceiver	7.17
Selectivity (see Selectivity)		Silicon	3.1	Choosing a commercial HF	7.44
Sensitivity	6.9	Silicone rubber compounds	26.4	Microwave SSB	11.24
Specification	6.9	Single sideband (see SSB)		QRP HF	7.28
Spurious responses	6.17	Skin effect	1.17	Transformer	1.18, 2.10
Strong signal performance	6.12	Slow scan TV (SSTV) (see Amateur television)		Auto	1.18, 2.12
Superhet	6.3	Smith chart	14.4, 14.18	Ratios	A.2
Third method	6.3	Smoothing (in PSUs)	24.3	Transistor	3.8
TRF	6.2, 6.40	Software		As a switch	3.13
Two-phase	6.3	Antenna modelling (see Antenna modelling)		Amplifier	3.9
VHF/UHF, design	9.3, 9.6	Circuit design	17.1	Bipolar	3.8
VHF/UHF front end	9.5	Satellite tracking	21.3	Configurations	3.12
Yearling, the	6.46	Solar effects on propagation	12.13	GaAsFETs	3.15
Reciprocal mixing	9.4	Soldering and desoldering		Junction Field Effect (JFET)	3.14
Rectifiers	3.4, 24.1	Iron	26.5	Transistor testing	25.8
Relays	2.13	Technique	26.13	MOSFET	3.15
Reliability of components	2.1	Sounders	2.14	VMOS	3.17
Resistance		Source resistance	1.3	Transmission lines	14.1
In AC circuit	1.12	Spectrum analyser	25.27	Coaxial cable	14.3, A.3
Dynamic	1.16, A.1	Speech processing	5.25, 8.31	Coaxial cable, splicing	14.11
Resistivity of metals	2.1	Spurious emissions	23.8	Construction	14.3
Resistors		SSB	1.25, 7.6, 11.30	Losses in	14.2
Fixed	2.2	Filter method	7.8	Twin feeders	14.3
In radio equipment	1.5	Phasing method	7.6	Transmitter monitor	25.21
In series and parallel	1.5, A.2	Standard frequency services	25.37	Transmitters	
Non-linear	2.3	Standing waves	13.1	For 136kHz (see LF)	
Surface mount (see Surface mount)		Standing wave ratio (SWR)	14.1, 14.2	HF	7.1, 7.21
Variable	2.3	Meter	25.28	Microwave	11.1
Resonance	1.14, A.2, A.6, A.7	Steels	26.2	Transverter	
Antenna (see Antenna resonance)		Stepper motors	5.39	10GHz	11.40
RF clipping (see Speech processing)		Sunspots (see Solar effects)		144/1296MHz	11.38
RF measurements	25.4, 25.6, 25.36	Surface mount	2.2, 2.16, 3.24, 8.9, 11.6	For HF	7.19
RF switching	5.15	Active components	26.24	For VHF/UHF	9.36
RMS values	1.12	Capacitors	2.17	VHF, driving	5.38
RTTY	19.3	Component markings	2.18	Triac (see Thyristor)	
S		Connectors	2.17	Triode (see Valves)	
Safe operating area	3.11	Construction using	26.23	Tropospheric	
Safety	10.15, 11.48, 24.1, 26.27, 26.32	Inductors and ferrites	2.17	Processes	12.21
Satellite	21.1	Packages and pinouts	11.35	Waves	12.3, 12.7
Annemas for	21.4	Resistors	2.16	Tubes, electronic (see Valves)	
Frequencies	21.3	Safety	26.27	Tunable toroid	2.10
Orbits	21.1	Size comparison	11.4	Tuned circuits	2.9
Service	21.1	Soldering	26.27	VHF/UHF	9.7
Summary of status	21.5	Static control	26.27	U	
Tracking	21.2			Unbalanced circuits	1.20
Transceivers for	21.5	T		V	
Schottky diode (see Diodes)		Television, amateur (see Amateur television)		Valves	3.24
Scrapyards as source of hardware	13.13	Television, breakthrough to	23.5	Amplification factor	3.28
Screening	1.19	Test and measurement		Anode tank circuits	7.3
Secondary cells	1.4	Using a computer	22.3	Applications	3.28
Selectivity	1.15	Tetrode (see Valves)		Characteristics	3.28
Self amalgamating tapes	26.4	Thyristor	3.18		
		Time constant	1.10, A.2		

INDEX

Construction	3.27	VHF/UHF receivers, transmitters and trans-	Gauge	A.3	
Diode (see Diode)		ceivers	9.1	Wood	26.4
Disc seal	3.30	VHF/UHF station, getting the best out of	9.1	Workshop practice	26.1
Electrode dissipation	3.28	VHF/UHF, choosing equipment for	9.46		
Impedance	3.28	VHF/UHF, books and magazines	9.46	Y	
Mutual conductance	3.28	Voice record-playback device	5.25	Yagi antenna (see Antennas, VHF/UHF and	
Pentode	3.26	Voltage measurement	25.1	Antennas, microwave)	
Power amplifier (see Amplifiers)		Voltage multiplier	24.3		
Receiving	6.21	Voltage regulator (see Power supplies)			
Tetrode	3.26	VOX	8.7, 8.31, 19.2	Z	
Triode	3.25	VSWR (see Standing wave ratio)		Zener diodes (see diodes)	
Varactor diodes (see diodes)				Zero IF SSB Transceiver	11.25
Variable frequency oscillator (see Oscillators)					
Variac	2.12	W			
Variometer	2.9	Wavelength (see Frequency)			
Velocity factor	14.1	Wind loading (see Antenna wind loading)			
		Wire	2.1		