
References and Bibliography

The reference number includes the chapter in which the reference is first cited or to which the reference is applicable; for example, Ref. 15.6 signifies Reference 6 in Chapter 15.

CHAPTER 1

- 1.1 Cote, A. J., Jr., "Matrix Analysis of Oscillators and Transistor Applications," *IRE Trans. Circuit Theory*, CT-5, 181–188 (Sept. 1958).
- 1.2 Kuo, Franklin F., *Network Analysis and Synthesis*, Wiley, New York, 1962.
- 1.3 Uzunoglu, Vasil, *Semiconductor Network Analysis and Design*, McGraw-Hill, New York, 1964.
- 1.4 Vander Pol, A., "Nonlinear Theory of Electric Oscillations," *Proc. IRE*, **22**, 1051–1086 (1934).
- 1.5 Edson, W. A., *Vacuum Tube Oscillators*, Wiley, New York, 1955.
- 1.6 Reich, Herbert J., *Functional Circuits and Oscillators*, Van Nostrand, Princeton, 1961.
- 1.7 Groszkowski, J., *Frequency of Self-Oscillations*, MacMillan, New York, 1964.
- 1.8 Hafner, E., *Analysis and Design of Crystal Oscillators*, Part I, Technical Report ECOM-274, U.S. Army Electronics Laboratories, U.S. Army Electronics Command, Fort Monmouth, N.J., May 1964.
- 1.9 Firth, D., *Quartz Crystal Oscillator Circuits Design Handbook*, Publication AD460-377, U.S. Army Electronics Command, Fort Monmouth, N.J., March 1965.
- 1.10 Frerking, M. E., *Crystal Oscillator Design and Temperature Compensation*, Van Nostrand Reinhold, New York, 1978.

References on Oscillator Frequency Stability and Noise

- 1.11 Kartaschoff, P., *Frequency and Time*, Academic, New York, 1978. Contains an extensive bibliography.
- 1.12 Blair, Byron B., *Time and Frequency: Theory and Fundamentals*, N.B.S. Monograph 140, U.S. Department of Commerce, Washington, D.C., 1974. Contains an extensive bibliography.

432 References and Bibliography

- 1.13 *Proceedings of the Annual Symposiums on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J. The issues of 1976, 1979, and 1980 contain extensive bibliographies.
- 1.14 *Proceedings of Annual Precise Time and Time Interval (PTTI) Applications and Planning Meeting*, NASA Goddard Space Flight Center, Greenbelt, Md.
- 1.15 *Hewlett Packard Application Notes*, Hewlett Packard Co., Palo Alto, Calif. Application Notes AN174-6, AN174-7, AN207, AN225, and AN240-0 are particularly useful.

CHAPTER 2

- 2.1 Holford, K., "Transistor LC Oscillator Circuits for Low Frequency Low Power Operation," *Mullard Tech. Commun.*, **41**, 17–25 (Dec. 1959).
- 2.2 Holford, K., "Transistor LC Oscillator Circuits Giving Moderate Values of Power Output," *Mullard Tech. Commun.* **42**, 60–70 (Feb. 1960).
- 2.3 Clarke, K. K. and Hess, D. T., *Communication Circuits: Analysis and Design*, Addison-Wesley, Reading, Mass., 1971.
- 2.4 Gray, P. E. and Searle, L. C., *Electronic Principles, Physics, Models, and Circuits*, Wiley, New York, 1969.
- 2.5 Hunter, L. P., *Handbook of Semiconductor Electronics*, third edition, McGraw-Hill, New York, 1971.

CHAPTER 3

- 3.1 Cady, W. G., *Piezoelectricity*, Dover, New York, 1964.
- 3.2 Heising, R. A., ed., *Quartz Crystals for Electrical Circuits*, Van Nostrand, New York, 1946.
- 3.3 Mason, W. P., "Use of Piezoelectric Crystals and Mechanical Resonators in Filters and Oscillators," *Physical Acoustics*, (W. P. Mason, ed.), Vol. 1A, pp. 335–416, Academic, New York, 1964.
- 3.4 Gerber, E. A. and Sykes, R. A., "State of the Art—Quartz Crystal Units and Oscillators," *Proc. IEEE*, **54**, 103–116 (Feb. 1966).
- 3.5 Hafner, E., "Crystal Resonators," *IEEE Trans. Sonics Ultrason.* **SU-21**, 220–237 (Oct. 1974).
- 3.6 Ballato, A., "The Future of the Quartz Crystal Industry—Worldwide," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 576–582. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.7 Ballato, A., "Doubly Rotated Thickness Mode Plate Vibrators," *Physical Acoustics* (W. P. Mason and R. N. Thurston, eds.), Vol. 13, pp. 115–181, Academic, New York, 1977.
- 3.8 van Randeraat, J., ed., *Piezoelectric Ceramics*, N. V. Philips, Eindhoven, 1968.
- 3.9 Hafner, E., "The Piezoelectric Crystal Unit-Definitions and Methods of Measurements," *Proc. IEEE*, **57**, 179–201 (Feb. 1969).
- 3.10 Berlincourt, D. A., Curran, D. R., and Jaffe, H., "Piezoelectric and Piezomagnetic Materials and Their Function in Transducers," *Physical Acoustics* (W. P. Mason, ed.), Vol. 1A, pp. 169–270, Academic, New York, 1964.
- 3.11 Ballato, A., "Resonance in Piezoelectric Vibrators," *Proc. IEEE*, **58**, 149–151 (Jan. 1970).

- 3.12 Hafner, E., "Theory of Oscillator Design," *Proc. 17th Annual Symposium on Frequency Control*, U.S. Army Electronics Laboratory, Fort Monmouth, N.J., pp. 508–536, 1963. Copies available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.
- 3.13 Warner, A. W., "Design and Performance of Ultraprecise 2.5-mc Quartz Crystal Units," *Bell System Tech. J.*, **39**, 1193–1217 (Sept. 1960).
- 3.14 Colorado Crystal Company, Loveland, Colo. 80537 (May 1980), private communication.
- 3.15 Kusters, J. A., "The SC Cut Crystal—An Overview," *Proc. IEEE Ultrasonics Symposium*, pp. 402–409, IEEE, New York, 1981.
- 3.16 White, R. M., "Surface Elastic Waves," *Proc. IEEE*, **58**, 1238–1276 (Aug. 1970).
- 3.17 Matthews, H., ed., *Surface Wave Filters*, Wiley, New York, 1977.
- 3.18 Oliner, A. A., ed., *Acoustic Surface Waves*, Springer, New York, 1978.
- 3.19 Cross, P. S. and Elliott, S. S., "Surface-Acoustic-Wave Resonators," *Hewlett-Packard J.*, **32**, 9–17 (Dec. 1981).
- 3.20 Lukaszek, T. and Ballato, A., "What SAW Can Learn from BAW: Implications for Future Frequency Control, Selection & Signal Processing," *Proc. IEEE Ultrasonics Symposium*, pp. 173–183, IEEE, New York, 1980.
- 3.21 Shreve, W. R., Bray, R. C., Elliott, S., and Chu, Y. C., "Power Dependence of Aging in SAW Resonators," *Proc. IEEE Ultrasonics Symposium*, pp. 94–99, IEEE, New York, 1981.
- 3.22 Chuang, S. S., "Quartz Tuning Fork Crystal Using Overtone Flexure Modes," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 130–143, 1981. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.23 Dinger, R. J., "A Miniature Quartz Resonator Vibrating at 1 MHz," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 144–148, 1981. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.24 Adachi, T., Tsuzuki, Y., and Takeuchi, C., "Investigation of Spurious Modes of Convex DT-Cut Quartz Crystal Resonators," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 149–156, 1981. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.25 Vangheluwe, D. C. L. and Fletcher, E. D., "The Edge Mode Resonator," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 157–165, 1981. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C., 20006.
- 3.26 Okano, S., Kodama, T., Yamazaki, K., and Kotake, H., "4.19 MHz Cylindrical AT-Cut Miniature Resonator," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 166–173, 1981. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.27 Kawashima, H., Sato, H., and Ochiai, O., "New Frequency Temperature Characteristics of Miniaturized GT-Cut Quartz Resonators," *Proc. 34th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 131–139, 1980. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.28 Kogure, S., Momosaki, E., and Sonoda, T., "New Type Twin Mode Resonator," *Proc. 34th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 160–166, 1980. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.29 Momosaki, E., Kogure, S., Inoue, M., and Sonoda, T., "New Quartz Tuning Fork with Very

434 References and Bibliography

- Low Temperature Coefficient," *Proc. 33rd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 247–254, 1979. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.30 Hermann, J. and Bourgeois, C., "A New Quartz Crystal Cut for Contour Mode Resonators," *Proc. 33rd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 255–262, 1979. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.31 Oguchi, K. and Momosaki, E., "+5° X Micro Quartz Resonator by Lithographic Process," *Proc. 32nd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 277–281, 1978. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.32 Guttwein, G. K., Ballato, A., and Lukaszek, T. J., *VHF-UHF Piezoelectric Resonators*, U.S. Patent 3,694,677 (Sept. 1972).
- 3.33 Bidart, L. and Chauvin, J., "Direct Frequency Crystal Oscillators," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 365–375, 1981. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.34 Shockley, W., Curran, D. R., and Koneval, D. J., "Trapped-Energy Modes in Quartz Filter Crystals," *J. Acoust. Soc. Am.*, **41**, 981–993 (1967).
- 3.35 Stoddard, W. G., "Design Equations for Plano-Convex AT Filter Crystals," *Frequency*, **1**, 47–50 (July–Aug. 1963); *Proc. 17th Annual Symposium on Frequency Control*, U.S. Army Electronics Laboratory, Fort Monmouth, N.J., pp. 272–282, 1963. Copies available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.
- 3.36 Ballato, A., "Frequency–Temperature–Load Capacitance Behavior of Resonators for TCXO Application," *IEEE Trans. Sonics Ultrason.*, **SU-25**, 185–191 (July 1978).
- 3.37 Bechmann, R., *Piezoelectric Quartz Vibrators—Properties of Cuts and Modes of Vibration*, Technical Report 2003, U.S. Army Signal R & D Laboratory, Fort Monmouth, N.J., Dec. 1958.
- 3.38 Gerber, E. A. and Sykes, R. A., "Quartz Frequency Standards," *Proc. IEEE*, **55**, 783–791 (June 1967).
- 3.39 Vig, J. R. and Le Bus, J. W., "UV/Ozone Cleaning of Surfaces," *IEEE Trans. Parts, Hybrids, Packag.*, **PHP-12**, 365–370 (Dec. 1976).
- 3.40 Hafner, E., "Quartz Crystal Oscillators," *National Bureau of Standards Seminar* (Aug. 1975), unpublished.
- 3.41 Ballato, A. and Vig, J. R., "Advances in the Stability of High Precision Crystal Resonators," *Proc. 11th Annual Precise Time and Time Interval Applications and Planning Meeting*, NASA Conference Publication 2129, Goddard Space Flight Center, Greenbelt, Md., pp. 403–438, 1979.
- 3.42 Hammond, D. L., Adams, C. A., and Benjaminson, A., "Hysteresis Effects in Quartz Resonators," *Proc. 22nd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 55–66, 1968. Copies available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.
- 3.43 Stratemeyer, H. P., "The Stability of Standard-Frequency Oscillators," *Gen. Radio Experimenter*, **38**, 1–16 (June 1964).
- 3.44 Gagnepain, J.-J., "Fundamental Noise Studies of Quartz Crystal Resonators," *Proc. 30th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 84–91, 1976. Copies available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.

- 3.45 Ballato, A., "Static and Dynamic Behavior of Quartz Resonators," *IEEE Trans. Sonics Ultrason.* **SU-26**, 299–306 (July 1979).
- 3.46 Knowles, J. E., "On the Origin of the 'Second Level of Drive' Effect in Quartz Oscillators" *Proc. 29th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 230–236, 1975. Copies available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.
- 3.47 Hammond, D., Adams, C., and Cutler, L., "Precision Crystal Units," *Proc. 17th Annual Symposium on Frequency Control*, U.S. Army Electronics R & D Laboratory, Fort Monmouth, N.J., pp. 215–232, 1963. Copies available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.
- 3.48 Bernstein, M., "Increased Resistance of Crystal Units at Oscillator Noise Levels," *Proc. IEEE*, **55**, 1239–1241 (July 1967).
- 3.49 Gagnepain, J.-J., "Nonlinear Properties of Quartz Crystal and Quartz Resonators: A Review," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 14–30, 1981. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.50 Gagnepain, J.-J., Ponçot, J.-C., and Peugeot, C., "Amplitude–Frequency Behavior of Doubly Rotated Quartz Resonators," *Proc. 31st Annual Symposium on Frequency Control*, U.S. Army Electronics R & D Command, Fort Monmouth, N.J., pp. 17–22, 1977. Copies available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.
- 3.51 Ballato, A. and Tilton, R., "Electronic Activity Dip Measurement," *IEEE Trans. Instrum. Meas.*, **IM-27**, 59–65 (March 1978).
- 3.52 King, J. C. and Sander, H. H., "Rapid Annealing of Frequency Changes in Crystal Resonators Following Pulsed X-Irradiation," *IEEE Trans. Nucl. Sci.*, **NS-19**, 23–32 (Dec. 1972).
- 3.53 King, J. C. and Sander, H. H., "Transient Change in Q and Frequency of AT-Cut Quartz Resonators Following Exposure to Pulse X-Rays," *IEEE Trans. Nucl. Sci.*, **NS-20**, 117–125 (Dec. 1973).
- 3.54 Koehler, D. R., "Radiation-Induced Frequency Transients in AT, BT, and SC Cut Quartz Resonators," *Proc. 33rd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 311–321, 1979. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 3.55 Ballato, A., Lukaszek, T. J., and Iafrate, G. J., "Subtle Effects in High-Stability Quartz Resonators," *Ferroelectrics*, **43**, 25–41 (1982).
- 3.56 Cook, R. K., Greenspan, M., and Weissler, P. G., "Thermal Voltages of a Quartz Crystal," *Phys. Rev.*, **74**, 1714–1719 (Dec. 1948).
- 3.57 Hafner, E., "Stability of Crystal Oscillators," *Proc. 14th Annual Symposium on Frequency Control*, U.S. Army Signal R & D Laboratory, Fort Monmouth, N.J., pp. 192–199, 1960. Copies available from National Technical Information Service, U.S. Department of Commerce, 5285 Port Royal Road, Springfield, Va. 22161.
- 3.58 Riley, W. J., "Frequency Stability in Precision Oscillators," *Electro-Technology*, **79**, 42–44 (Apr. 1967).
- 3.59 Walls, F. L. and Wainwright, A. E., "Measurement of the Short-Term Stability of Quartz Crystal Resonators and the Implications for Crystal Oscillator Design and Applications," *IEEE Trans. Instrum. Meas.*, **IM-24**, 15–20 (Mar. 1975).
- 3.60 Burgoon, R. and Wilson, R. L., "Performance Results of an Oscillator Using the SC Cut Crystal," *Proc. 33rd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 406–410, 1979. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.

436 References and Bibliography

- 3.61 "Military Standard. Crystal Units (Quartz) and Crystal Holders (Enclosures), Selection of," MIL-STD-683F, U.S. Department of Defense, 1978.
- 3.62 "Military Specification. Crystal Units, Quartz, General Specification for," MIL-C-3098G, U.S. Department of Defense, 1979.
- 3.63 "Military Specification. Holders (Enclosures), Crystal, General Specification for," MIL-H-10056E, U.S. Department of Defense, 1975.
- 3.64 "IEEE Standard on Piezoelectricity," IEEE, New York, 1978. IEEE Standard 176-1978.
- 3.65 "IEEE Standard Definitions and Methods of Measurement for Piezoelectric Vibrators," IEEE, New York, 1966. IEEE Standard 177-1966; ANSI Standard C83.17-1970.
- 3.66 "Quartz Crystal Units for Frequency Control and Selection. Part 1: Standard Values and Test Conditions," second edition, IEC Publication 122-1, 1976. Copies available from American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.
- 3.67 "Guide to the Use of Quartz Oscillator Crystals," IEC Publication 122-2, Section 3 (1962; Amendment 1, 1969). Copies available from American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.
- 3.68 "Basic Method for the Measurement of Resonance Frequency and Equivalent Series Resistance of Quartz Crystal Units by Zero Phase Technique in a π -Network," IEC Publication 444, 1973. Copies available from American National Standards Institute, 1430 Broadway, New York, N.Y. 10018.
- 3.69 Parzen, B., "Theoretical and Practical Effects of the Resonator Specifications and Characteristics upon Practical Crystal Oscillator Design and Performance," *Proc. 36th Annual Symposium on Frequency Control*, U.S. Army Electronics R & D Command, Fort Monmouth, N.J., in press.
- 3.70 Bottom, V. E., *Introduction to Quartz Crystal Unit Design*, Van Nostrand Reinhold, New York, 1982.

CHAPTER 13

- 13.1 Ebert, J. and Kazimierczuk, M., "Class E High-Efficiency Tuned Power Oscillator," *IEEE J. Solid State Circuits*, SC-16, 62-65 (Apr. 1981).
- 13.2 Driscoll, M. M., "Two-Stage Self-Limiting Series Mode Type Quartz-Crystal Oscillator Exhibiting Improved Short-Term Frequency Stability," *IEEE Trans. Instrum. Meas.* IM-22, 130-138 (June 1973).
- 13.3 Healey, D. J., III, "Low-Noise Frequency Source," *Proc. 27th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 170-178, 1973. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 13.4 Rhode, U. L., "Mathematical Analysis and Design of Ultra-Stable Low Noise 100 MHz Crystal Oscillator with Differential Limiter and its Possibilities in Frequency Standards," *Proc. 32nd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 409-425, 1978. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 13.5 Baugh, R. A., "Low Noise Frequency Multiplication," *Proc. 26th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 50-54, 1972. Copies available from the Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 13.6 Grosblambert, J., Marianneau, G., Olivier, M., and Ubersfeld, J. "The Design and Performance of a Crystal Oscillator Exhibiting Improved Short-Term Frequency Stability," *Proc.*

28th Annual Symposium on Frequency Control, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 181–183, 1974. Copies available from the Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.

- 13.7 Neubig, B., "Design of Crystal Oscillator Circuits," *VHF Commun.* (Mar.–Apr. 1979).
- 13.8 Military Specification, Oscillators, Crystal, General Specification for, MIL-0-55310, U.S. Department of Defense, Dec. 1970. (Latest issue should be used.)

CHAPTER 14

- 14.1 Truxal, J. G., *Control Engineers Handbook*, McGraw-Hill, New York, 1955.
- 14.2 Chestnut, H. and Mayer, R. W., *Servomechanisms and Regulating Systems Design*, Wiley, New York, 1959.
- 14.3 Gardner, F. M., *Phaselock Techniques*, second edition, Wiley, New York, 1979.
- 14.4 Kulagin, E. V., Pikhtele, A. I., Sokolov, V. P., and Fateev, B. P. "Natural Fluctuations in a Quartz Crystal Oscillator with Automatic Gain Control," *Izv. Vysshikh Vchebnykh Zavedeni, Radiofiz.*, 21(11), 1618–1626 (Nov. 1976). English translation (1979) available from Plenum, New York.
- 14.5 Healey, D. J., III, "SC-Cut Quartz Crystal Unit in Low-Noise Application at VHF," *Proc. 35th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 440–454, 1981. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 14.6 Burgoon, R. and Wilson, H. L., "Design Aspects of an Oscillator Using the 8C-Cut Crystal," *Proc. 32nd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 411–416, 1979. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 14.7 Babbitt, H. S., III, "Precision Oscillators in the LES-8/9 Spacecraft," *Proc. 31st Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 412–420, 1977. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 14.8 Pustarfi, H. S., "An Improved 5 MHz Reference Oscillator for Time and Frequency Standard Applications," *IEEE Trans. Instrum. Meas.*, IM-15, 196–198 (Dec. 1966).
- 14.9 Felch, E. P. and Israel, J. O., "A Simple Circuit for Frequency Standards Employing Overtone Crystals," *Proc. IRE*, 43, 596–603 (May 1955).
- 14.10 Halford, D., Wainwright, A. E., and Barnes, J. A., "Flicker Noise of Phase in RF Amplifiers and Frequency Multipliers: Characterization, Cause and Cure," *Proc. 22nd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 340–346, 1968. National Technical Information Service, Accession NR AD844911.
- 14.11 Leeson, D. B., "A Simple Model of Feedback Oscillator Noise Spectrum," *Proc. IEEE*, 54, 329–330 (Feb. 1966).
- 14.12 Sauvage, G., "Phase Noise in Oscillators: A Mathematical Analysis of Leeson's Model," *IEEE Trans. Instrum. Meas.* IM-26 (No. 4), 408–410 (Dec. 1977).

CHAPTER 15

- 15.1 Besson, R. E., Girardet, P. G., and Graf, E. P., "Performance of New Oscillators Designed for 'Electrodeless' Crystals," *Proc. 34th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 457–462, 1980. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.

438 References and Bibliography

- 15.2 Holmbeck, J. D., "Frequency Tolerance Limitations with Logic Gate Oscillators," *Proc. 31st Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 390–395, 1977. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 15.3 Farrell, J. J., "Crystals and NMOS: Frequency Controlled MPUs," *Proc. 32nd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 332–336, 1978. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 15.4 Luxmore, T. and Newell, D. E., "The MXO-Monolithic Crystal Oscillator," *Proc. 31st Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 396–399, 1977. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 15.5 Blood, B., "IC Crystal Controlled Oscillators," *Motorola Applications Note AN417B*, Motorola Semi-Conductor Products, Inc., Phoenix, Ariz., 1977.
- 15.6 Lane, M. F., "Crystal Oscillator Design Employing Digital Integrated Circuits as the Active Element," *Telecom Australia Research Laboratories Report Number 6949*, Melbourne, Australia, 1975.

CHAPTER 16

- 16.1 Hildreth, T. E., "IC Crystal Oscillators," *Interdesign/Tridar Monochip Application Note APN-4*, Sunnyvale, Calif.
- 16.2 Hatchett, J. and Janikowski, R., "Predict Frequency Accuracy for MC 12060 and MC 12061 Crystal Oscillator Circuits," *Motorola Engineering Bulletin EB-59*, Motorola Semi-conductor Products, Inc., Phoenix, Ariz.
- 16.3 Arnold, M., "Improved Frequency Stability Circuit for 10 MHz Quartz Crystal," *Funk-Tech*, 33(23), WS 380-1 (Dec. 1978) (in German).
- 16.4 Thomas, H. P., Sherman, J. H., Jr., and Early, R. C., "Microminiature Crystal Oscillators," *Frequency*, 17–23 (Sept./Oct. 1967).
- 16.5 Jackson, H. W., "Tactical Miniature Crystal Oscillator," *Proc. 34th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 449–456, 1980. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 16.6 Embree, D. M., *et al.*, "Miniature Packaged Crystal Oscillators," *Proc. 34th Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 475–487, 1980. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.
- 16.7 "Oscillators, Crystal, Class 1 (Crystal Oscillator (XO)) 1 kHz through 50 MHz Hermetic Seal," U.S. Department of Defense, *Military Specification Sheet, MIL-O-55310/8A*, 5 March 1975.
- 16.8 Meyer, R. G. and Soo, D. C. F., "MOS Crystal Oscillator Design," *IEEE J. Solid-State Circuits*, SC-15(2), 222–228 (Apr. 1980).

CHAPTER 17

- 17.1 Parzen, B., "Requirements and Evaluation of the Stability of the Circuitry, Excluding the Crystal, in Crystal Oscillators," *Proc. 34th Annual Symposium on Frequency Control*, U.S.

Army Electronics Command, Fort Monmouth, N.J., pp. 471–474, 1980. Copies available from Electronic Industries Association, 2001 Eye St., NW, Washington, D.C. 20006.

CHAPTER 18

- 18.1 Kodoma, S. and Sato, Y., “An Analysis of Unwanted Frequency Oscillation in a Crystal Controlled Oscillator,” *Proc. 33rd Annual Symposium on Frequency Control*, U.S. Army Electronics Command, Fort Monmouth, N.J., pp. 417–424, 1979. Copies available from Electronic Industries Association, Washington, D.C. 20006.
- 18.2 Bahadur, H. and Parshad, R., “Use of Transistor Heavy Biasing for a Novel Method of Generation of Quartz Crystal Overtones and Mixed Frequency Oscillations,” *Proc. IEEE*, **68**(10), 1345 (Oct. 1980).
- 18.3 Unkrich, M. A. and Meyer, R. G., “Conditions for Start-Up in Crystal Oscillators,” *IEEE J. Solid State Circuits*, **SC-17**(1), 87–90 (Feb. 1982).