

Publications

▪ Books and Book Chapters

1. *Phase-Locked Frequency Generation and Clocking: Architectures and Circuits for Modern Wireless and Wireline Systems*, Edited by W. Rhee, *The Institution of Engineering and Technology (IET)*, June 2020.
2. *Wireless Transceiver Circuits: System Perspectives and Design Aspects*, Edited by W. Rhee and K. Iniewski, *CRC Press*, Feb. 2015.

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3. N. Xu, W. Rhee, and Z. Wang, "FIR filtering techniques for clock and frequency generation," *Mixed Signal Circuits*, Edited by T. Noulis and M. Soma, *CRC Press*, Oct. 2015.
4. N. Xu, W. Rhee, and Z. Wang, "Hybrid phase modulators with enhanced linearity," in *Chapter xx, Wireless Transceiver Circuits: System Perspectives and Design Aspects*, Edited by W. Rhee and K. Iniewski, *CRC Press*, Feb. 2015.
5. X. Yu, W. Rhee, and Z. Wang, " $\Delta\Sigma$ phase-locked loops," in *Chapter 12, CMOS Nanoelectronics: Analog and RF VLSI Circuits*, Edited by K. Iniewski, *McGraw Hill Publishers*, Sept. 2011.
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▪ Journals

1. M. Ni, X. Wang, F. Li, W. Rhee, and Z. Wang, "A 13-Bit 2-GS/s time-interleaved ADC with improved correlation-based timing skew calibration strategy," accepted for *IEEE Trans. Circuits and Systems I*.
2. B. Wang, H. Song, W. Rhee, and Z. Wang, "Overview of ultra-wideband transceivers—system architectures and applications," *Tsinghua Science and Technology*, vol. 27, no. 3, pp. 481-494, Nov. 2021.
3. X. Xu, Z. Wang, W. Rhee, and Z. Wang, "A bias-current-free fractional- N hybrid PLL for low-voltage clock generation," *IEEE Trans. Circuits and Systems I*, vol. 68, pp. 3611-3620, Sept. 2021.
4. J. Zhao, Y. Zhang, K. Zeng, W. Rhee, and Z. Wang, "A 2.4-GHz crystal-less GFSK receiver using an auxiliary multiphase BBPLL for digital output demodulation with enhanced frequency scaling," *IEEE Trans. Circuits and Systems II*, vol. 68, pp. 1143-1147, Apr. 2021.
5. C. Ding, B. Wang, H. Song, W. Rhee, and Z. Wang, "A 3.5-GHz 0.24-nJ/b 100-Mb/s fully balanced FSK receiver with sideband energy detection," *IEEE Solid-State Circuits Letters*, vol. 4, 2021.
6. X. Zheng *et al.*, "Frequency-domain modeling and analysis of injection-locked oscillators," *IEEE Journal of Solid-State Circuits*, vol. 55, pp. 1651-1664, June 2020.
7. H. Song, D. Liu, Y. Zhang, W. Rhee, and Z. Wang, "A 6.5–8.1-GHz communication/ranging VWB transceiver for secure wireless connectivity with enhanced bandwidth efficiency and $\Delta\Sigma$ energy detection," *IEEE Journal of Solid-State Circuits*, vol. 55, pp. 219-232, Feb. 2020.
8. Z. Ding, X. Xu, H. Song, W. Rhee, and Z. Wang, "Flash ADC based digital LDO with nonlinear decoder and exponential-ratio array," *Electronic Letters*, vol. 55, no. 10, pp. 585-587, May 2019.

9. Y. Zhang, N. Meng, X. Huang, W. Rhee, and Z. Wang, "A 3.7-mW 2.4-GHz phase-tracking GFSK receiver with BBPLL-based demodulation," *IEEE Journal of Solid-State Circuits*, vol. 54, pp. 336-345, Feb. 2019.
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14. F. Chen, W. Rhee, and Z. Wang "A 5 mW 750 kb/s noninvasive transceiver for around-the-head audio applications," *IEEE Trans. Circuits and Systems II*, vol. 65, pp. 196-200, Feb. 2018.
15. Z. Weng *et al.*, "400 MHz/2.4 GHz combo WPAN transceiver IC for simultaneous dual-band communication with one single antenna," *IEEE Trans. Circuits and Systems I*, vol. 65, pp. 745-757, Feb. 2018.
16. Y. Zhang, R. Zhou, W. Rhee, and Z. Wang, "A 1.9 mW 750 kb/s 2.4 GHz F-OOK transmitter with symmetric FM template and high-point modulation PLL," *IEEE Journal of Solid-State Circuits*, vol. 52, pp. 2627-2735, Oct. 2017.
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- Invited Talks in International Conferences & Workshops
 1. W. Rhee, "PLL architectures, tradeoffs, and key application considerations," *IEEE International Solid-State Circuits Conference (ISSCC)*, San Francisco, CA, USA, Feb. 2021. (online)
 2. W. Rhee, "Single-bit delta-sigma modulation techniques for robust communication systems," *IEEE International Conference on ASIC (ASICON)*, Chongqing, China, Oct. 2019.
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 4. W. Rhee, "Energy-efficient proprietary transceivers for IoT and smartphone-based WPAN," *IEEE International Microwave Symposium (IMS) Workshop*, Philadelphia, Pennsylvania, June 2018.
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6. W. Rhee, "Phase-locked clock/frequency generation and modulation," *IEEE Midwest Symp. Circuits and Systems (MWSCAS)*, Abu Dhabi, UAE, Oct. 2016.
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11. W. Rhee, "Phase-locked clocking and frequency synthesis - System perspectives tailored for IC designers," *IEEE International Symposium on Circuits and Systems (ISCAS)*, Lisbon, Portugal, May 2015.
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13. W. Rhee, "Frequency synthesizers for wireless transceivers," *IEEE International Solid-State Circuits Conference (ISSCC)*, San Francisco, CA, USA, Feb. 2015.
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15. W. Rhee, "Frequency synthesizers: From basics to advanced bundle," *IEEE Asian Solid-State Circuits Conference (A-SSCC) Tutorial*, Singapore, Nov. 2013.
16. W. Rhee, X. Chen, and Z. Wang, "Delta-sigma ranging method for UWB radar systems," *CMOS Emerging Technologies*, Whistler, Canada, July, 2013.
17. W. Rhee, X. Yu, and Z. Wang, "Fractional-N phase-locked loops for wireline and wireless," *CMOS Emerging Technologies*, Whistler, Canada, May 2010.
18. W. Rhee, "Frequency synthesizers and PLL," *IEEE International Conference on Solid-State and Integrated-Circuit Technology (ICSICT) Tutorial*, Beijing, China, Oct. 2008.
19. W. Rhee, "Clocking frequencies and spectralizing clocks in SoC design," *International SoC Design Conference (ISOCC) Tutorial*, Seoul, Korea, Oct. 2007.
20. W. Rhee, "Practical design aspects in fractional-N frequency synthesis," *12th Workshop on Advances in Analog Circuit Design*, Graz, Austria, Apr. 2003.
21. D. Wilson, W. Rhee, and B. S. Song, "Integrated RF receiver front ends and frequency synthesizers for wireless," *Emerging Technologies: Designing Low Power Digital Systems, Tutorial Workshops in IEEE International Symposium on Circuits and Systems (ISCAS)*, pp. 369-396, June, 1996.

▪ IEEE DL Talks & Webinar

1. W. Rhee, "Phase-locked loops: System perspectives tailored for IC designers," *IEEE SSCS Webinar Series*, Nov. 2017.
2. W. Rhee, "Phase-locked frequency synthesis and modulation for modern wireless transceivers," *IEEE Distinguished Lecture Series in SSCS Kansai Chapter*, Dec. 2017.
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