

## DAFTAR PUSTAKA

- [1] Amazon, "Apa itu 5G?," AWS Amazon. <https://aws.amazon.com/id/what-is/5g/>.
- [2] Doni, "Jaringan 5G Resmi Beroperasi, Transformasi Digital Melesat," Kominfo. <https://www.kominfo.go.id/content/detail/34812/jaringan-5g-resmi-beroperasi-transformasi-digital-melesat/0/artikel>.
- [3] D. N. K. A. Zaidel et al., "Improvement of the *Bandwidth* and Scattering Parameter Performances of 5G Branch-Line *Coupler* Design for the Use in Intelligent Transportation System (ITS)," *Journal of Telecommunication, Electronic, and Computer Engineering*, vol. 10, no. 1–12, pp. 89–92, 2018.
- [4] D. M. Pozar, "Power Dividers and Directional *Couplers*," in *Microwave Engineering*, 4th ed., USA: John Wiley & Sons Inc., 2011, ch. 7, pp. 317–379.
- [5] D. A. Letavin, "Design of *Broadband* Branch-line *Coupler* Based on Compact Structure," in 2019 Radiation and Scattering of Electromagnetic Waves (RSEMW), 2019, pp. 168–170, DOI: 10.1109/RSEMW.2019.8792803.
- [6] H. Tanaka et al., "Miniaturized 90 Degree *Hybrid Coupler* Using High Dielectric *Substrate*," in 1996 IEEE MTT-S International Microwave Symposium Digest, 1996, pp. 793–796, DOI: 10.1109/MWSYM.1996.511057.
- [7] R. Fernandez, "Rancang Bangun *Hybrid Coupler* untuk Low-Cost Butler Matrix," *Jurnal Nasional Teknik Elektro*, vol. 6, no. 3, pp. 214–218, 2017, DOI: 10.25077/jnte.v6n3.488.2017.
- [8] I. Surjati, Y. Kn, and A. Kamira, "Perancangan dan Realisasi *Hybrid Coupler* yang Bekerja pada Frekuensi 2.3 GHz," in *Prosiding Seminar RiTekTra*, 2013, pp. 93–96.
- [9] S. March, "A Wideband Stripline *Hybrid Ring*," *IEEE Transaction on Microwave Theory and Technology*, pp. 361, 1968, DOI: 10.1109/TMTT.1968.1126693.
- [10] J. L. B. Walker, "Improvements to the Design of the 0-180° Rat Race *Coupler* and Its Application to the Design of Balanced Mixers with High LO to RF Isolation," in *IEEE MTT-S International Microwave Symposium Digest*, 1997, vol. 2, no. 1, pp. 747–750, DOI: 10.1109/mwsym.1997.602898.

- [11] K. Thiagarajan, T. Kesavamurthy, K. A. Banupriya *et al.*, "Miniaturized *Broadband Branch Line Coupler* for WiMAX and LTE Applications," *International Journal Wireless and Mobile Computing*, vol. 8, no. 1, pp. 66–73, 2015, DOI: 10.1504/IJWMC.2015.066748.
- [12] Y. H. Chun and J. S. Hong, "Compact *Wide-Band Branch-Line Hybrids*," *IEEE Transaction on Microwave Theory and Technology*, vol. 54, no. 2, pp. 704–709, 2006, DOI: 10.1109/TMTT.2005.862657.
- [13] R. K. Barik, K. V. P. Kumar, and S. S. Karthikeyan, "Compact Wideband 3dB *Branch Line Coupler* with Multiple Symmetric PI Section," in *Proceedings of the 45th European Microwave Conference*, 2015, pp. 275–278, DOI: 10.1109/EuMC.2015.7345753.
- [14] L. Punitha *et al.*, "Analysis of RF Transceiver for 5G Applications," in *2019 URSI Asia-Pacific Radio Science Conference*, 2019, pp. 1–4, DOI: 10.23919/URSIAP-RASC.2019.8738422.
- [15] N. H. A. Rahim *et al.*, "Development of *Branchline Coupler* using Parallel Coupled Transmission Lines," in *2016 3rd International Conference on Electronic Design (ICED)*, 2016, no. 1, pp. 76–79, DOI: 10.1109/ICED.2016.7804610.
- [16] I. Bahl and P. Bhartia, "*Hybrid and Couplers*," in *Microwave Solid State Circuit Design*, 4th ed., New Jersey: John Wiley & Sons Inc., 2003, ch. 5, pp.181-246.
- [17] T. C. Edwards and M. B. Steer, "Introduction to Design using Microstrip and Planar Lines," in *Foundations for Microstrip Circuit Design*, 2nd ed., UK: John Wiley & Sons Inc., 2016, ch. 1, pp.1-18.
- [18] C. A. Balanis, "*Microstrip and Mobile Communication Antennas*," in *Antenna Theory: Analysis and Design*, 4th ed., Canada: John Wiley & Sons Inc., 2020, ch. 14, pp. 783-867.
- [19] T. Gisslen, "What is CST Studio Suite?," Technia. <https://www.technia.com/blog/what-is-cst-studio-suite/>.