Analysis and Design of Radio Frequency Circuit on Wireless Range Finding

林信達、林漢年

E-mail: 9419819@mail.dyu.edu.tw

ABSTRACT

It is the inexorable trend of the car technology development to use the advanced communication, electronics and image processing to improve the driving safety. Most countries have devoted to enhancing the driving safety and to reducing the casualties and loss by traffic accidents. The wireless range finder is a very popular technology. It is used as a blind-spot detecting system to assist the driver for safety improvement without damaging appearance of the car. Because of antenna is the most important core component in the radar system. There is a detail study for its characteristic and the practicability on car in this thesis.

Keywords : Radio Frequency、Microstrip Antennas

Table of Contents

REFERENCES

[1] Balanis, C. A., Antenna Theory Analysis and Design, Wiley, 1997.

[2] Nathan, C.,“ Fractal Element Antennas, ” Journal of Electronic Defense, 1997.

[3] Song, C. T. P. and Hall, P. S.,“ Fractal Stacked Monopole With Very Wide Bandwidth, ” Electronics Letters, Vol. 35, No.12, 1999.

[4] Carles, P. B.,“ On the Behavior of the Sierpinski Multiband Fractal Antenna, ” IEEE Trans. on Antennas and Propagation, Vol. 46, No. 4, 1998.

[5] Werner, D. H. and Lee, D.,“ Design of Dual-polarised Multiband Frequency Selective Surfaces Using Fractal Elements, ” Electronics Letters, Vol. 36, No. 6, 2000.

[6] Mandelbrot, B. B., The Fractal Geometry of Nature, W.H. Freeman, 1994.

[7] Stevens, R. T., Fractal Programming in Turbo Pascal, Calif.M&T Books, 1990.

[8] Falconer, K. J., Fractal Geometry : Mathematical Foundations and Applications, Wiley, 1990.

[9] http://alumni.nctu.edu.tw/~sinner/complex/fractals/ [10] 黃宗宗，三頻主動集成天線之設計與分析，碩士論文，國防大學中正理工學院電子工程研究所，2000.

[11] Douglas, H. W. and Pingjuan, L. W.,“ Frequency Independent Features of Self-Similar Fractal Antennas, ” Radio Science, Vol. 31, No. 6, 1996.

[12] Kim, Y. and Jaggard, D. L.,“ The Fractal Random Array, ” Proceedings of the IEEE, Vol. 74, No. 9, 1986.

[13] Douglas, H. W., Randy, L. H., and Pingjuan, L. W.,“ Fractal Antenna Engineering: The Theory and Design Fractal Antenna Arrays, ” IEEE Trans. on Ant. and Propagation, Vol. 41, No. 5, 1999.

[14] 劉伊哲，蓮蓬狀碎形微帶天線之設計與分析，碩士論文，國防大學中正理工學院電子工程研究所，2001.

[15] ARTC研計三課 范志銘,“ 先進安全車輛介紹 ” [16] 袁杰,“ 高頻通信電路設計:被動網路, ” 全華, 1991.

[17] 黃智裕 凌菁偉,“ 微帶天線設計－使用IE3D ” [18] DAVID M.POZAR ,“ Microwave Engineering ” [19] John Wiley ,“ Microstrip Antennas: The Analysis And Design Of Microstrip Antennas And Arrays (a Selected Reprint Volume) ” [20] 張盛富 戴明鳳,“ 無線通信之射頻

被動電路設計 “