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Paper Title: Design of Pressure-Volume Catheter's Status Monitoring System by An Implanted Triple Band Fractal Circular Microstrip Patch Antenna (CFPA)

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Abstract

This paper presents pressure-volume (p-v) catheter's status monitoring by an implanted triple band fractal circular microstrip patch antenna (CFPA). The p-v catheter status consists of heart pressure's status and heart volume's status. Both statuses are used for analyzing the heart's status, which can predict heart failure. CFPA is designed by radial basis function neural network (RBFNN) to analyze the structure that fits the operated triple band. CFPA is designed to operate at 915 MHz, 2.4 GHz, and 3.1 GHz for Industrial, Scientific, and Medical (ISM) bands and Ultra Wideband (UWB) respectively. To analyze the suitable antenna structure, CST Microwave Studio, and MATLAB software are used for this purpose. Finally, the return loss of the antenna is less than or equal to -10 dB.