무선 센서 네트워크용 주파수 조정이 가능한 마이크로 스트립 패치 안테나 설계 및 해석

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Design and analyes of reconfigurable inset-fed microstrip patch antennas for wireless sensor Networks

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Abstract : In this paper, a tunable microstrip patch antenna designed using RF MEMS switches is reported. The design and simulation antenna were performed using high frequency structure simulator (HFSS). The antenna was designed in ISM Band and operates simultaneously at 2.4 GHz and 5.7 GHz with a -10 dB return-loss bandwidth of 20 MHz and 180 MHz, respect-tively. To obtain high efficiency and improve integrated ability, the High Resistivity Silicon (HRS) wafer was used for the antenna. The antenna achieved high gain with 8 dB at 5.7 GHzand 1.5 dB at 2.4 GHz. The RF MEMS DC contact switches was simulated and analysis by ANSYS software.

Key Words : Reconfigurable antenna; RF MEMS switches; wireless sensor network; inset-fed patch antenna.