Broadband Pattern Reconfigurable Filtering Microstrip Antenna with Quasi-Yagi Structure

ABSTRACT

In this letter, a compact pattern reconfigurable filtering microstrip antenna is presented with broad bandwidth, good selectivity at the passband edge, and flat gain frequency response. The pattern reconfigurable filtering antenna has four resonant modes which can be adjusted independently, three of them are created by multi-mode resonator (MMR) and the other one is by radiator. The four resonant modes are well distributed in desired band and the resonant mode of radiator is located between the first two resonant modes of MMR. By the incorporation of two PIN diodes and metal strips, the radiation patterns can be reconfigured. When the resonant mode of radiator shifts slightly, the bandwidth and in-band characteristic of filtering antenna is basically unaffected. Finally, a pattern reconfigurable filtering antenna prototype with a fractional bandwidth (FBW) of 25% at 5.2 GHz is designed and manu-factured. The measured results are well followed designed ones.

EXISTING SYSTEM

- The technique for compact filtering antenna design, which replaces the last-stage resonator with antenna radiator.

- The technical requirements in high data rate and large system capacity communication lead to the development of broadband or ultra-wideband (UWB) filters and antennas.

- However, it is difficult to use filter synthesis approach to design broadband or UWB filtering antennas with high band-edge selectivity.

PROPOSED SYSTEM

- In this letter, a compact broadband pattern reconfigurable filtering inverted-L microstrip antenna is presented with four resonant modes which can be adjusted flexibly.

- Furthermore, the pattern reconfiguration can be achieved with strip quasi-Yagi structure. The slightly shift of the resonant mode of radiator which caused by quasi-Yagi structure does not affect the bandwidth and in-band characteristic.

- The antenna has many advantages, such as broad bandwidth, good selectivity at the passband edge, and flat gain frequency response.

SYSTEM REQUIREMENTS

HARDWARE REQUIREMENTS:

·   Processor   -   intel core i3

·   RAM   -   2GB

·   Hard Disk   -   20 GB

SOFTWARE REQUIREMENTS:

·   Ansoft HFSS(High Frequency Structure Stimulator)

REFERENCE

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