

عنوان مقاله:

Gain and Bandwidth Enhancement of Slot Antenna Using Two Unprinted Dielectric Superstrate

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خلاصه مقاله:

This paper presents a high-gain and wideband antenna with a compact, simple and low-profile structure. The design strategy of high gain Fabry-Perot resonator antennas (FPRA), which have a superstrate with increasing phase in the operating band, has been applied to design the antenna. A double-layered unprinted dielectric superstrate is used as a partially reflective surface (PRS) to enhance the gain of the antenna and to produce a reflection phase curve versus frequency with a positive slope. The superstrate is composed of two dielectric slabs, and it is truncated so that its dimension to be about $1.5\lambda \times 1.5\lambda$. By using such an unprinted double-layered dielectric, as a superstrate, the bandwidth of about 14.3% can be achieved. To further increase the size of the upper unprinted slab, the gain can be enhanced, without compromising the bandwidth. A prototype antenna has been designed and simulated at 9 GHz. The achieved peak gain is 17 dB.

کلمات کلیدی:

Cavity antenna, Fabry-Perot antenna, Superstrate, High gain

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