

Miniaturization of a patch antenna by thin film materials

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Abstract : The miniaturization of printed antennas is made possible by changing the volume of the antenna with high permittivity materials, ferroelectric, ferromagnetic, magneto-dielectric, etc. More traditionally, the dielectric having a high permittivity were employed to decrease the physical dimensions of antenna patch. The problems often encountered with high permittivity substrates are, degradation of the gain and the bandwidth and therefore the efficiency of the antenna. The use of magnetic materials would be an interesting solution for the miniaturization of antennas without degrading performance due to the significant value of permeability.

Keywords : patch antenna, magneto-dielectric materials, HFSS, thin films.