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| **Abstract:** |  |
| This Paper presents Microstrip patch antenna for  WiMAX communication system which operate at 5.8 GHz  frequency band. The main objective of this paper is to design and observe the performance of the designed microstrip patch antenna for different dielectric materials.  The size of the designed antenna has been also miniaturized.  Better performance is observed for FR4 and dupont-951  dielectric material. For FR4 radiation efficiency is-2.776 dB  and total efficiency is -3.026 dB at 5.8 GHz, this indicates  better performance. And for dupont-951 the return loss is  much lower comparing to the other dielectric materials used  in this research, which is -16.609 dB. Also for dupont-951  and FR4, VSWR is found 1.35 and 1.7 respectively which is  desirable. Also the size of the antenna has been reduced. In  this paper we also observed and analyzed the radiation  pattern of far field region, gain, radiation efficiency and  total efficiency for different dielectric materials | |