Abstract

In the recent era of wireless communication, Microstrip antenna (MSA) is hot research topic attracting attentions of many researchers. But MSAs have few foremost drawbacks viz narrow impedance Axial Ratio Bandwidth (A. R. BW), low gain and power handling capability. To overcome these drawbacks, novel hybridization method is proposed. A hybridization method includes array method, parasitic patch on superstrate cover and multi stacking instead of the conventional superstrate cover. To achieve the high efficiency, air is used as dielectric medium between feed patch and ground plane as well as between superstrate and feed patch. Due to low cost, availability and ease of fabrication FR4 material is used as superstrate. Proposed system is implemented using FR4 and the results of simulation clearly indicate parametric variations for the various hybrid methods.

References

- V. C. Kshirsagar, "Design and development of stacked planar high gain antenna
- Chao Sun, Jiu-sheng Li “A Novel Planar Microstrip Array Antenna for WLAN Applications”; IEEE conference 978-1-4244-8268-9/11
- Tommy Reynalda, Achmad Munir and Endon Bharata “Characterization of 4x4 high gain microstrip array antenna for 3.3 GHz WiMAX application”; The 6th International Conference on Telecommunication Systems, Services, and Applications 2011
- Jung-han kim, Joong-Kwan Kim, Yong-Jin kim and Hong-min lee “High gain antenna using parasitic shorted annular patch structure”; IEEE Proceedings of Asia-Pacific Microwave Conference 1-4244-0749-4/07
- Dongying Li, Szabo, Z. Xianming Qing, Li. E. P. Zhi Ning Chen “High Gain Antenna with an optimized metamaterial inspired superstrate”; IEEE Transactions on Antennas and propagation 12/2012; 60 (12): 60186023. DOI:10.1109/TAP.2012.2212231
- Siew bee yeap and Zhi Ning Chen “Microstrip patch antennas with enhanced gain by partial substrate removal”; IEEE transactions on antennas and propagation, vol. 58, no. 9, September 2010
- Kaushik Mandal and Partha Prtim Sarkar “High Gain Wide-Band U-Shaped Patch
Antennas with Modified Ground Planes”; IEEE transactions on antennas and propagation, vol. 61, no. 4, April

**Index Terms**

Computer Science  Communications

**Keywords**

Array method  gain enhancement  hybridization  microstrip antenna  superstrate cover